

Republic of Kenya

EDICT OF GOVERNMENT

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KS Code (1997) (English): Building Code of the Republic of Kenya (1997 Edition)



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(ABJ)

REPUBLIC OF KENYA

BUILDING CODE

Sh. 500—1997

THE LOCAL GOVERNMENT (ADOPTIVE BY-LAWS)
(BUILDING) ORDER 1968

INDEX TO CONTENTS

PART I—INTRODUCTORY

By-law

- 1—Citation.
- 2—Interpretation.
- 3—Erection of buildings.
- 4—Application form.
- 5—Submission of plans.
- 6—Fees.
- 7—Approval of plans.
- 8—Approval of minor alterations and additions.
- 9—Extent of approval.
- 10—Grounds for disapproval.
- 11—Minor buildings.
- 12—Farm buildings for agriculture and storage.
- 13—Temporary buildings, housing of occasional labour.
- 14—Temporary housing of building labour and watchmen.
- 15—Temporary latrine accommodation.
- 16—Notices and inspections.

PART II—SITING AND SPACE ABOUT BUILDINGS

- 17—Space in front of buildings.
- 18—Side spaces.
- 19—Minimum measurement of courtyard.
- 20—Means of access.
- 21—External passage.
- 22—Service areas.
- 23—Building lines.
- 24—Siting of buildings.
- 25—Access of plots.
- 26—Frontage.
- 27—Public buildings.
- 28—Boundary walls.
- 29—Height of boundary walls.
- 30—Obstruction to view.
- 31—Waiver as to height.

INDEX TO CONTENTS—(Contd.)

PART III—BUILDING MATERIALS

By-law

- 32—General.
- 33—Second-hand materials.
- 34—Testing of materials.
- 35—Application of British Standards and Codes of Practice.
- 36—Other standards.
- 37—Protection of persons and property.

Building Sites

- 38—Drainage of sub-soil.
- 39—Preparation of sites.
- 40—Prevention of damp.
- 41—Sites filled with offensive materials.
- 42—Identification of plot boundaries.

Foundations

- 43—Foundations generally.
- 44—Strip foundations for domestic buildings.
- 45—Reinforced concrete foundations.

General Load-bearing Requirements

- 46—Load-bearing structures generally.
- 47—Structural steelwork.
- 48—Structural work of reinforced concrete.
- 49—Structural work of timber.
- 50—Structural work of aluminium.
- 51—Walls, piers, and columns of bricks, stone, etc.

Walls

- 52—Walls generally.
- 53—Dimensions.
- 54—Non-load-bearing walls, partitions and individual panels.
- 55—Rendering.
- 56—Foundation walls.
- 57—Chimneys.
- 58—Cavities.
- 59—Mortar.
- 60—Chases.
- 61—Non-load-bearing walls.
- 62—External walls in domestic buildings.
- 63—Party or separating walls.
- 64—Boundary walls and fences.

Walls—Resistance to Weather and Damp

- 65—External walls—weather resistance.
- 66—Protection against moisture from the ground.
- 67—Damp-proof courses, etc.
- 68—Prevention of damp in cavity walls.

Fire Resistance—General

- 69—Interpretation.
- 70—Walls complying with Third Schedule to these By-laws.

INDEX TO CONTENTS—(Contd.)

Fire Resistance—Small Houses

By-law

- 71—Definition of small house.
- 72—External walls of small houses.
- 73—Walls separating small houses.
- 74—Further provisions as to walls separating small houses.
- 75—Floors and interior walls of small houses.
- 76—Garages attached to dwellings.

Fire Resistance of Buildings Other than Small Houses

- 77—General rule as to external walls, other than walls of small houses.
- 78—Modifications for external walls of certain one-storey buildings.
- 79—Modifications for external walls of certain buildings of more than one storey.
- 80—Modifications for external walls of large storage buildings.
- 81—Separating walls.
- 82—Buildings erected on single plot for different tenancies.
- 83—Fire-division of warehouses.
- 84—Fire-division walls.
- 85—Fire-division of offices.
- 86—Walls separating flats.
- 87—Fire resistance of floors, columns, beams and certain walls.
- 88—Ceiling of public buildings.
- 89—Stairs for two or more dwellings.

Fire Resistance—Miscellaneous Provisions Applying to All Building

- 90—Fire stops in cavity walls.
- 91—Openings in external walls.
- 92—Structural members supporting certain walls.
- 93—External panel walls in frame structures.

Roofs

- 94—Roofs—protection against fire.
- 95—Roof access.
- 96—Roofs to be weather-proof.
- 97—Roof coverings.

Floors

- 98—Floors—resistance to moisture—ventilation.
- 99—Black cotton soil.
- 100—Protection against termites.

INDEX TO CONTENTS—(Contd.)

Chimneys, Flues and Hearths

By-law

- 101—Materials.
- 102—Exceptions.
- 103—Hearths.
- 104—Jambs.
- 105—Lintels, etc.
- 106—Thickness of back of openings.
- 107—Damp-proof courses, etc.
- 108—Thickness of chimneys.
- 109—Lining of chimneys.
- 110—Rendering of outside of chimneys, etc.
- 111—Timber, etc., in or near chimneys.
- 112—Metal fastenings.
- 113—Chimneys to be weather-proof.
- 114—Minimum height of chimneys.
- 115—Width of chimneys.
- 116—Flues communicating with habitable rooms.
- 117—Fireplaces, etc.
- 118—Floors under stoves, etc.

Factory Chimney Shafts

- 119—Application of By-laws to certain chimney shafts.
- 120—Construction of shafts and blast furnaces.
- 121—Shafts constructed of brickwork, stonework or blockwork
- 122—Protection of metal work.
- 123—Independent linings.

Design and Erection of Certain Buildings

- 124—Registered architect and structural designer.
- 125—Certificate as to workmanship.
- 126—Inspector.
- 127—Application of by-laws 124, 125 and 126 to buildings
- 128—Tests—steel and concrete.
- 129—Design and calculations.
- 130—Structural designers.
- 131—High stress reinforced concrete—supervision.
- 132—Welding.

Stairs

- 133—Dimensions.
- 134—Handrails.
- 135—Central handrails.
- 136—General.

Lifts

- 137—Enclosure and position.
- 138—Certificate of efficiency.

INDEX TO CONTENTS—(Contd.)

Refuse Disposal

By-law

- 139—Disposal.
- 140—Refuse chutes.
- 141—Construction of refuse chutes.
- 142—Completion of means of refuse disposal.

Water Supply

- 143—Water supply.
- 144—Stop-taps.
- 145—Overflow pipes.
- 146—Pipe joints.
- 147—Plumbing.
- 148—Supply of water for fire fighting.
- 149—Fittings.

Ventilation of buildings

- 150—Windows.
- 151—Area of windows.
- 152—Space opposite windows.
- 153—Back-to-back dwellings.
- 154—Definition—back-to-back dwellings.
- 155—Ventilation—habitable rooms.
- 156—Kitchens.
- 157—Larders—ventilation.
- 158—Staircases—ventilation and lighting.
- 159—Size and height of rooms.
- 160—Height of bathroom, W.C.s and stores.
- 161—Ventilation of shops.
- 162—Doors and windows not to open outwards.
- 163—Garages connected to a dwelling.
- 164—Buildings of the warehouse class—ventilation and lighting
- 165—Artificial lighting and mechanical ventilation.
- 166—Public building—lighting and ventilation.

Drainage

- 167—Definitions.
- 168—Drainage.
- 169—Level of lowest storey.
- 170—Drainage of roofs.
- 171—Surface water.
- 172—Combined drains.
- 173—Drains in streets.
- 174—Materials and construction of drains and private sewers.
- 175—Inlets to drains to be trapped.
- 176—Drains and sewers passing through or under walls.
- 177—Branch drains.
- 178—Manholes.
- 179—Construction.
- 180—Ventilating pipes.
- 181—Soil pipes and ventilating pipes.
- 182—Access.
- 183—Waste pipes.
- 184—Maintenance of water seal in taps.

INDEX TO CONTENTS—(Contd.)

Sanitary Conveniences

By-law

- 185—Water-closets.
- 186—Urinals.
- 187—Trough closets.
- 188—Fixings and floor water closets.
- 189—Bathrooms.
- 190—Lighting and ventilation of water closets and urinals
- 191—Latrine accommodation.
- 192—Hand washing facilities.
- 193—Latrine, bath, lavatory basin, etc., accommodation.

Sewers

- 194—Buildings over sewers.
- 195—Power to prohibit.
- 196—Trade effluent.
- 197—Manufacturing premises.
- 198—Injurious matters.
- 199—Sewer connexion notice.
- 200—Sewer connexions to be authorized.
- 201—Premises outside the council area.

Septic and Conservancy Tanks

- 202—Sewage and waste water disposal.
- 203—Radial arms.
- 204—Waste water storage tanks.
- 205—Prohibition of open channels.
- 206—Temporary Construction.
- 207—Pail closets.
- 208—Pail closet requirements.
- 209—Pit closets.
- 210—Plumbers and drain layers.

Means of Escape in Case of Fire

- 211—Buildings of the warehouse class.
- 212—Domestic and public buildings.
- 213—Access from fire escapes.
- 214—Fire fighting.

Scheduled Special Areas and Special Building

- 215—Scheduled residential accommodation.
- 216—Habitable rooms.
- 217—Latrines and ablutions.
- 218—Cooking areas.
- 219—Washing facilities.
- 220—Paved areas.
- 221—Refuse bins.
- 222—Party walls.
- 223—Internal walls.
- 224—Employees' housing.
- 225—Height of habitable rooms
- 226—Water.
- 227—Dormitory accommodation

INDEX TO CONTENTS—(*Contd.*)

PART IV—ADVERTISEMENTS

By-law

- 228—Application.
- 229—Consent required.
- 230—Permitted advertisements.
- 231—Unauthorized advertisements.
- 232—Licences.
- 233—Removal of advertisements.
- 234—Dangerous advertisements.
- 235—Posters.

PART V—GENERAL

- 236—Domestic buildings generally.
- 237—Treatment of timber and metal.
- 238—Hoardings or scaffolding.
- 239—Removal of materials, etc.
- 240—Demolition.
- 241—Damage to streets.
- 242—Disregard of approved plans.
- 243—Ruinous or dangerous structures.
- 244—Sale of materials.
- 245—Closing of streets.
- 246—Domestic servants' quarters.
- 247—Paving of open spaces.
- 248—Rat proofing.
- 249—Canopies.
- 250—Projections.
- 251—Rainwater disposal—existing buildings.
- 252—Unauthorized buildings and change of use
- 253—Contravention of by-laws.
- 254—Notice and orders.
- 255—Service of notices and orders.
- 256—Official inspections.
- 257—Penalties.
- 258—Execution of work required by a notice.
- 259—Charges to cover supervision.

SCHEDULES

First Schedule—Deposit of plans and other particulars.

Part A.—General Instructions as to foregoing.

Part B.—Notice of intention to erect a building partly exempted from the operation of By-laws in pursuance of by-laws 11 to 14.

Part C.—Notice of intention to erect, alter or extend a factory chimney.

Part D.—Notice of intention to make an alteration or extension of a building.

Part E.—Further particulars which may be required.

Part F.—Notice of intention to make, and a description of, a material change in the purposes for which the building or part of the building is used.

Part G.—Notice of intention to execute works or install fittings in connexion with a building.

Part H.—Notice of intention to erect a building for which there is no relaxation of the operation of building by-laws.

Part I.—Notice of intention to erect, fix, place or post an advertisement.

Second Schedule—Calculation of Loading.

Third Schedule—Walls of stone, bricks or blocks.

Fourth Schedule—Provisions prescribing notional periods of fire resistance for various types of construction.

Table A.—Walls and partitions.

Table A(2).—Hollow stud partitions.

Table B.—Floors.

Table C.—Steel columns and beams.

Table D.—Reinforced concrete columns and beams.

Fifth Schedule—Tiles and asbestos slates.

Sixth Schedule—Public buildings.

Appendix to Sixth Schedule.

Seventh Schedule—Reinforced concrete: working rules.

Eighth Schedule—Structural designers.

Ninth Schedule—The structural use of timber.

Tenth Schedule—Fees.

Eleventh Schedule—Watchmen on building sites.

Twelfth Schedule—Sanitation.

Table 1.—Domestic building (excluding dwellings).

Table 2.—Factories.

Table 3.—Restaurants, tea rooms and eating houses.

Table 4.—Hotels, residential clubs, boarding houses and hostels.

Table 5.—Hospitals.

Table 6.—Cinemas, concert halls, theatres, art galleries, libraries and museums.

Appendix I—Section 30 of the Factories Act (Cap. 514).

Appendix II—Day or boarding schools and colleges.

THE LOCAL GOVERNMENT REGULATIONS 1963

(L.N. 256 of 1963)

IN EXERCISE of the powers conferred by regulation 210 of the Local Government Regulations 1963, the Minister for Local Government hereby makes the following Order:—

THE LOCAL GOVERNMENT (ADOPTIVE BY-LAWS) (BUILDING) ORDER 1968

1. This Order may be cited as the Local Government (Adoptive By-Laws) (Building) Order 1968.
2. The By-Laws set out in this Order shall be the adoptive building by-laws which any municipal or county council may adopt.

- Building plans
- Grade B
by-laws

PART I—INTRODUCTION

1. These By-laws may be cited as the Local Government Citation.
(Building) By-Laws 1968.
2. In these By-laws, except where the context otherwise requires— Interpretation.

“advertisement” means any word, letter, model, sign, placard, board, notice, device or representation, whether illuminated or not, in the nature of and employed wholly or in part for the purpose of advertisement, announcement or direction;

“approved” means approved by the council;

“approved plan” means plan or plans retained by the council, whether approved or not, pursuant to paragraph 6 of First Schedule to these By-laws;

“building” means any structure movable or fixed of whatsoever kind or any part thereof and includes drainage work and excavation;

“building of the warehouse class” means a building designed or lawfully used as a warehouse, godown or factory, or for carrying on a wholesale business, but does not include any living accommodation which may form part of or be annexed to such building, and the formation of an access to a plot;

“canopy” means a covering over a street at about first floor level, which extends beyond a plot boundary;

“cavity wall” means a wall comprising two or more leaves, with intervening cavities, and references to a cavity in a wall shall be construed as referring to all such intervening cavities in that wall;

“combined drain” means a drain used for the drainage of two or more buildings, made for the purpose of connecting to a sewer;

“council” means a municipal council or a county council;

“dead load” means the weight of all walls, partitions, floors, roofs, and other permanent constructions;

“domestic building” means any building which is neither a public building nor a building of the warehouse class;

“drain” means any drain used for the drainage of one building only, or of premises within the same curtilage and made merely for

the purpose of communicating therefrom with a receptacle for drainage, or with a sewer into which the drainage of two or more buildings or premises occupied by different persons is conveyed;

“drainage work” means the installation, repairing or removal of any works for the reception or disposal of sewage, waste or dirty water and surface water;

“dwelling” means a part of a building lawfully used or constructed, adapted or designed to be used as a residence for one family and includes such out-buildings as are ancillary thereto;

“dwelling house” means a building designed for use exclusively as one self-contained residence, together with such out-buildings as are ancillary thereto;

“external wall” means an outer wall of a building but does not include a party or separating wall;

“factory” has the meaning assigned to it under the Factories Act (*see* Appendix I);

“habitable room” means a room used or intended to be used for the purpose of working, living or sleeping, other than a kitchen, or laundry room for the sole use of the occupants of the dwelling to which it is attached;

“height” in relation to a building, means the height of the building measured from the mean level of the ground adjoining the outside of the external walls to the level of half the vertical height of the roof or to the top of the walls (or of the parapet) whichever is the higher;

“imposed load” means all loads other than the dead load;

“internal open space” means an open space which is surrounded by buildings either wholly or to such an extent that the free passage of air into and throughout such space is, or is likely to be, impeded;

“kitchen” means a room designed, adapted or used solely for the purpose of preparing or cooking food and washing utensils;

“latrine accommodation” means a receptacle or receptacles for faecal matter, together with the structure containing such receptacle and the fittings and apparatus connected therewith;

“non-combustible material” means material which satisfies the test for non-combustibility prescribed in British standard 476 Fire Tests on Building Materials and Structures;

“occupier” means any person in actual lawful occupation of land or premises;

“owner” in the case of freehold property means the person (other than the Government) registered as the owner of the freehold of such property and in the case of any property held under a lease from the Government for a period of not less than ten years, or for the natural life of any person, or which is renewable from time to time at the will of the lessee indefinitely or for a further period which together with the first period thereof amounts in all to not less than ten years, means the person (other than a mortgagee) registered as the lessee of such property and includes any agent who receives rents or profits on behalf of such person, and also any superintendent, overseer or manager of any such lessee in respect of the holding on which he resides as such superintendent, overseer or manager.

"pail closet" means latrine accommodation having a movable receptacle for faecal matter;

"party wall" (or "separating wall") means—

- (a) a wall forming part of a building and used or constructed to be used for the separation of adjoining buildings belonging to different owners or occupied, or constructed or adopted to be occupied, by different tenants; or
- (b) a wall forming part of a building and standing, to a greater extent than the projection of the footings, on lands of different owners.

"plinth area" means the sum total of the floor areas contained in all the storeys of a building the measurements for which shall be taken from the external faces of the enclosing walls or limits of such building;

"plot" means any piece or parcel of land which is the subject of a registered conveyance, or lease from the Government or any portion thereof the position and boundaries of which are delineated on a plan of sub-division such plan having received the approval of the council in writing and the Commissioner of Lands or been approved by the Commissioner of Lands or other competent authority;

"public building" means a building used or intended to be used either ordinarily or occasionally, as a church, chapel or other place of public worship, or as a hospital, public institution, college or school not being merely a private dwelling house so used, theatre, public hall, public concert room, public ballroom, public lecture room, or public exhibition room, or as a public place of assembly for persons admitted thereto by tickets or otherwise, or used or intended to be used, either ordinarily or occasionally, for any other public purpose;

"separating wall" has the same meaning assigned to it under "party wall";

"sewer" means a duct, other than a drain or combined drain, constructed, acquired, or maintained by the council for conveying sewage or surface water or a combination of both;

"soil water fitting" means water closet, slop sink or urinal and all fittings adapted or designed for the reception of faecal matter;

"storey" in the by-laws relating to fire resistance means the ground floor storey and any higher storey, and in all other by-laws the expression includes any storey below the ground floor storey, and any mezzanine storey;

"street" means any highway, road or service lane, or any land reserved for a highway, road or service lane, and includes any bridge, footway, square, court, alley or passage, whether a thoroughfare or not;

"water closet" means latrine accommodation which includes provision for the flushing of the receptacle by water;

"width" applied to a street means the distance between opposite plot boundaries, measured at right angles to the direction of the street.

Application of By-Laws—Plans, Notices, Fees, etc.

Erection of
buildings.

3. (1) A person who erects a building or develops land or changes the use of a building or land, or who owns or occupies a building or land shall comply with the requirements of these By-laws.

(2) For the purpose of these By-laws any of the following operations shall be deemed to be the erection of a building—

- (a) the re-erection of any building or part of a building when an outer wall of that building or, as the case may be, that part of such building has been pulled down, burnt or damaged;
- (b) the roofing over of any open space;
- (c) the alteration or extension of a building;
- (d) the erection, alteration or extension of a chimney shaft;
- (e) the changing of the use or uses to which land or a building is put;
- (f) increasing or reducing the number of dwellings in a building;
- (g) the carrying out of any drainage work;
- (h) the installation of any fittings to which by-laws 143 to 149 or by-laws 167 to 179 of these By-laws refer;
- (i) the formation or laying out of an access to a plot;

(3) Notwithstanding anything contained in these By-laws these By-laws shall not apply in the case of areas scheduled by the council, with the approval of the Minister by notice in the Gazette, and the areas so scheduled shall be subject to either the Local Government (Adoptive By-laws) (Grade II Building) Order 1968 or by-law 12 of these By-laws as specified in the Notice.

L.N. 16/1969.

Application form.

4. A person who intends to erect a building shall submit a written application to do so in such form as the council may require, completing all details required therein in so far as they apply to the proposals. The application form shall be completed in ink, signed by the developer or by a person representing himself to be his duly authorized agent in which event it shall state the name of the person on whose behalf it has been submitted. The form shall be attached to any plans or documents submitted in accordance with by-law 5 of these By-laws.

Submission of
plans.

5. A person who intends to erect a building or materially change the use of a building or part of a building shall furnish the council in the manner provided in Part A of the First Schedule to these By-laws with such of the following particulars as are applicable—

- (a) if the building is one for which the council may relax in whole or in part, the provisions of these By-laws as provided for in by-laws 11 to 14 of these By-laws, the particulars specified in Part B of the First Schedule to these By-laws;
- (b) if the building is a chimney shaft to which by-laws 120 to 123 of these By-laws apply, the particulars specified in Part C of the First Schedule to these By-laws;

- (c) if the building is an alteration or extension to an existing building, the particulars specified in Part D of the First Schedule to these By-laws, and if so required by the council, the particulars specified in Part E of the First Schedule to these By-laws or in the case of a chimney shaft, the particulars specified in Part C of the First Schedule to these By-laws;
- (d) if the building constitutes a change of use or uses, the particulars specified in Part F of the First Schedule to these By-laws and any particulars which may be required under paragraph (c) of this by-law;
- (e) if the building constitutes drainage work or the installation of any fittings referred to in by-law 3 (2) (h) of these By-laws, the particulars specified in Part G of the First Schedule to these By-laws;
- (f) in the case of any other building, the particulars specified in Part H of the First Schedule to these By-laws and if the council so requires the particulars specified in Part E of the First Schedule to these By-laws:

Provided that the particulars specified in Part E of the said Schedule shall not be so required in respect of any work to which by-law 44, by-law 49 (b) or by-law 51 (2) of these By-laws apply.

6. (1) When a person submits an application pursuant to these By-laws a fee shall be paid to the Council in accordance with the charges and conditions prescribed in the Tenth Schedule to these By-laws.

Fees.

(2) Where structural drawings are required as referred to in Part E of the First Schedule to these By-laws at the time of submission, a fee shall be paid to the council as prescribed in the Tenth Schedule to these By-laws.

Approval of
Plans.

7. (1) Within thirty days of the receipt of a duly completed application form together with such particulars as are required by these By-laws the council shall notify the applicant in writing whether or not the application has been approved:

Provided that the council may within the said thirty days extend the period in the case of any particular application for a further thirty days.

(2) Notwithstanding paragraph (1) of this by-law, the council may, with the consent of the applicant further extend the aforesaid periods.

Approval of
minor alterations
and additions.

8. (1) Notwithstanding anything contained in these By-laws, the council may grant permission in writing to any person to proceed with any minor alteration or addition to a building or the erection of any boundary wall, screen wall, fence or of a hoarding, or the formation of any access, which complies generally with the intent and purpose of these By-laws, but which is regarded by the council as of minor importance:

Provided that such permission shall automatically lapse in the event of not being acted upon within six months of the date of its grant.

Extent of approval.

(2) The council may delegate its powers under this by-law to an officer of the council or such other person as the council may appoint.

9. (1) The approval by the council of any plans for the erection of any buildings shall be subject to conformity with these By-laws and shall be null and void if—

- (a) the work shall not have been commenced within twelve months from the date of such approval; or
- (b) a notice of commencement, in accordance with by-law 16 (1) (a) (i) of these By-laws has been given but the work is not completed within two years from the date of approval of the plans or such other extended period as the council may authorize; or
- (c) compliance is not made with any conditions imposed at the time of such approval.

(2) Any person who causes any building to be erected, in whole or in part, after the approved plans thereof have become invalidated by virtue of paragraph (1) of this by-law shall be guilty of an offence.

(3) Unless the council otherwise agrees, the approval of plans under these By-laws shall not be deemed to authorize any unauthorized building work or change of existing use of the premises to which such plan relates at the date of approval.

Grounds for disapproval of plans.

10. Subject to any power of relaxation conferred upon the council by these By-laws, the council shall disapprove the plans for the erection of a building if—

- (a) the plans are not correctly drawn or do not provide sufficient information or detail to show whether or not the submission complies with these By-laws;
- (b) such plans disclose a contravention of these By-laws or of any other written law.

Minor buildings.

11. (1) These By-laws, except those specified in Part II of these By-laws may be relaxed by the council—

- (a) in the case of a building of not more than 160 sq. ft. floor area constructed to be used exclusively as a conservatory, plant house, poultry house, garden tool house, summer house, aviary or cycle shed:

Provided that any building to which this by-law applies if constructed mainly of wood or other inflammable material shall not be erected nearer than a distance equal to twice its height to any other building or a plot boundary, except that a conservatory may be attached to any building other than one to which this proviso applies; and

- (b) in the case of a building constructed to be used only in connexion with and during the construction, alteration or repair of any building or other work.

Farm buildings for agriculture and storage, etc.

12. (1) In the areas scheduled by the council under by-law 3 (3) of these By-laws, by-law 16 and Parts III and V of these By-laws, save in so far as by-laws 17 and 18 of these By-laws operate in relation to the building specified in paragraph (2) of this by-law which complies with the conditions specified in paragraph (3) of this by-law.

(2) The buildings referred to in paragraph (1) of this by-law are buildings which are not public buildings and are not for use either wholly or partly for human habitation or for the habitual employment of persons in agriculture, manufacture, trade or business:

Provided that a building constructed to be used exclusively or principally for the shelter of animals, poultry, plant or machinery or for the storage of produce and materials, shall be deemed to be a building to which paragraph (1) of this by-law refers if the only persons habitually employed in it are engaged solely in the general care, supervision or regulation or in the maintenance of animals, poultry, plant or machinery or in the storage or removal of the materials.

(3) The conditions referred to in paragraph (1) of this by-law are as follows, that is to say the building shall be distant from any building other than a building specified in paragraph (2) of this by-law or in by-laws 11 to 13 of these By-laws and from the nearest boundary of the premises, by not less than the distance specified in column (5) of the Table set out below opposite the description of the building in the said columns (1), (2), (3) and (4) thereof:

Provided that where a building is completely separated into two or more parts by fire-division walls complying with the provisions of by-law 84. of these By-laws, the provisions of this by-law shall apply as if each such part were a separate building.

TABLE

<i>Height and capacity of buildings</i>	<i>Covering of roof</i>	<i>Structure of external walls</i>	<i>Fire resistance of external walls</i>	<i>Distance</i>
(1)	(2)	(3)	(4)	(5)
Not exceeding either 30 ft. in height or 125,000 cu. ft. in capacity	Non-combustible material	Externally non-combustible	One hour	10 ft.
	Non-combustible material	Externally non-combustible	Less than one hour	20 ft.
	Combustible material	Combustible	—	30 ft.
Exceeding either but not both, 30 ft. in height or 125,000 cu. ft. in capacity	Non-combustible material	Externally non-combustible	One hour	15 ft.
	Non-combustible material	Externally non-combustible	Less than one hour	35 ft.
	Combustible material	Combustible	—	50 ft.
Exceeding both 30 ft. in height and 125,000 cu. ft. in capacity	Non-combustible material	Externally non-combustible	One hour	20 ft.
	Non-combustible material	Externally non-combustible	Less than one hour	40 ft.
	Combustible material	Combustible	—	60 ft.

Temporary buildings, housing of occasional labour.

13. (1) The council may in writing and upon such conditions as it deems fit, grant permission for the temporary erection and use of buildings which would otherwise not comply with the provisions of these By-laws, to accommodate occasional labour such as crop pickers or quarry labour.

(2) A person who contravenes or fails to comply with any of the conditions of a permission granted under this by-law shall be guilty of an offence.

Temporary housing of building labour and watchmen.

14. (1) The council may in writing and upon such conditions as it deems fit, grant permission to an employer to erect temporary living accommodation for building labourers and watchmen in connexion with a specific building operation.

(2) An application for such permission shall be made in writing to the council signed by or on behalf of the employer and shall state—

- (a) the number of the approved plan relating to the operation;
- (b) the location of the site;
- (c) the estimated duration of the building operation; and
- (d) the number of workmen or watchmen to be accommodated.

(3) In the case of watchmen, compliance must be made with the provisions of the Eleventh Schedule to these By-laws.

(4) An employer who accommodates workmen or watchmen on a building site without the written permission of the council or who contravenes or fails to comply with the provisions of the Eleventh Schedule to these By-laws or any of the conditions of a permission granted under this by-law, shall be guilty of an offence.

Temporary latrine accommodation.

15. (1) Every person employing labour in the erection or demolition of a building shall make provision on the site for and thereafter maintain for such time as the labour is engaged on the site, good and sufficient temporary latrine accommodation for the use of such labour.

(2) The council may order pail closets and pails with a proper supply of earth, sand, ashes or disinfectants to be provided by such person notwithstanding that conservancy fees may be chargeable in respect thereof.

(3) A person who contravenes or fails to comply with the provisions of paragraph (1) of this by-law shall be guilty of an offence.

Notices and inspections.

16. (1) Any person who erects a building, to which these By-laws apply shall give to the council in writing on a "Notice of inspection" card, obtainable from the council, not less than thirty hours notice (such period to count from the hour and date of receipt by the council) of the date and time at which—

- (a) (i) the erection of the building will begin;
- (ii) the work of plumbing and drain-laying will begin; and
- (b) the following shall be ready for inspection or testing either in part or in whole—
 - (i) the foundation bed;
 - (ii) the foundation concrete;
 - (iii) the damp proof course;

- (iv) the filling;
- (v) the concrete after shuttering is removed;
- (vi) the concrete after shuttering is removed;
- (vii) the drainage;
- (viii) the plumbing installations;
- (ix) the sewer connexion.

(2) A notice required to be served upon the council under paragraph (1) of this by-law shall be delivered at the office of the council on any week-day, excluding Saturday, before 3.30 p.m. Saturdays, Sundays and public holidays shall not be included in any calculation of time in respect of the required period of notice:

Provided that, for the construction of buildings in isolated areas the council may dispense with the inspections referred to in paragraph (1) (b) of this by-law in which event the person who erects a building shall—

- (i) ascertain that the work is carried out or supervised by persons competent in respect of work involved;
- (ii) upon application as required in paragraph (3) of this by-law, send a notice to the council confirming that the work is in accordance with the approved plan and these By-laws;
- (iii) permit upon completion, and at any time during construction, reasonable tests of the structure to be carried out or exposure of the work to an extent which will enable an authorized officer of the council to satisfy himself that the building has been constructed in accordance with these By-laws;
- (iv) at all reasonable times afford to an authorized officer of the council free access for the purpose of inspection;
- (v) if he neglects or refuses to give any required notice, comply with any notice in writing served by the council requiring him within a reasonable time to cut into, lay open or pull down so much of the building, works or fittings as prevents the council from ascertaining whether any of these By-laws have been contravened;
- (vi) if he has received a notice in writing from the council pointing out the reasons in which a building or works or fittings contravene these By-laws, alter or amend the building so as to comply with these By-laws, and within a reasonable time after the completion of such work give notice to the council in writing of its completion;
- (vii) if he is so required by notice from the council, forthwith stop the construction of any building or other work which contravenes these By-laws or is not in accordance with the building plans or particulars approved by the council.

(3) A person who has erected a building shall forthwith give to the council notice in writing of its completion to enable a final inspection to be made and a certificate of completion to be issued.

(4) No person shall occupy, use or permit the occupation or use of any building before a certificate of completion has been issued by the council in respect thereof.

(5) On the completion of the building and before the final inspection is made the person erecting the same shall—

- (a) clear the site and any adjacent land of all surplus building material, excavated material and all other rubbish and temporary structures and leave such site or land clean and tidy; and
- (b) restore and leave in proper condition all pipes, drains, roadways, kerbs, water channels, footways, pavements and other things which may have been damaged by or through building operations or transport used in connexion therewith.

(6) Any person who contravenes or fails to comply with the provisions of paragraphs (4) or (5) of this by-law shall be guilty of an offence.

PART II—SITING AND SPACE ABOUT BUILDINGS

Space in front
of buildings.

17. (1) A domestic building shall be so sited as to leave an open space immediately in front thereof which extends along the whole width of the front of the building and is not less than 20 ft. wide measured at right angles therefrom:

Provided that if the building fronts on a street of a less width than 20 ft., the width of such open space may be not less than the width of the street plus one half of the difference between that width and 20 ft.

(2) Any part of the open space referred to in paragraph (1) of this by-law, which lies within the plot, shall be free from any building thereon above the level of the ground, except a fence, wall or gate not exceeding 4 ft. 6 in. in height, or a portico, porch, step or other like projection from the building.

Side spaces.

18. (1) A building which is designed either wholly or in part for residential purposes shall be provided on at least one side with an open space 8 ft. or more in width measured from the boundary of the nearest plot facing that side at right angles to the nearest point of the building thereto.

(2) The open space required by paragraph (1) of this by-law, shall extend along the entire length and for the full height of the said building.

(3) Notwithstanding the provisions of this by-law, the council may give consent to the erection of such a building so sited as to leave no such open space, if in its opinion it is reasonable and desirable so to do, and may, for like reasons, permit the erection of a garage or other out-buildings on the said open space.

Minimum
measurement of
courtyard.

19. Where any building contains more than one dwelling and is designed to have an internal courtyard or open space, there shall be provided within such courtyard or open space an area free from obstruction of not less than 350 sq. ft. and having no dimension less than 15 ft.

Means of access.

20. (1) Unless the council otherwise agrees, a building shall be provided with a secondary means of access.

(2) Every domestic building, every dwelling, and every separate tenancy or occupancy, shall have independent access to a street; such street not being a sanitary lane or passage:

Provided that dwellings contained in a block of flats or separate offices and occupancies within a building above street level, may have a common access to such street.

21. Any passage between buildings erected on the same plot or between a building and the boundaries of the plot on which such building is situated, shall have minimum dimensions of 4 ft. in width and 7 ft. in height.

External passage.

22. Unless the council otherwise agrees, an approved open area shall be left on each plot for the purpose of servicing any building thereon and the means of access to such area shall be of approved dimensions:

Service areas.

Provided that under this by-law, the council shall not require a service area greater in extent than the area of the plot required to be left uncovered under the provisions of any other written law.

23. (1) The council may prescribe a building line for any street or part of a street.

Building lines.

(2) A person who shall erect any building other than a boundary wall, fence, gate, portico, step or other like projection from the building, nearer to the street than such building line, shall be guilty of an offence.

24. All new buildings shall be so sited on a plot as to ensure hygienic and sanitary conditions and to avoid as far as possible any nuisance or annoyance to the owners or occupiers of neighbouring plots.

Siting of buildings.

25. (1) Every plot shall be provided with at least one access from a road.

Access of plots.

(2) An access or alteration to an existing access to a plot shall be sited and constructed to the satisfaction of the council.

(3) Where access to a plot requires the crossing of an open space, an approved culvert, if so required by the council, shall be provided for the full width of the entrance or for a length of 14 ft., whichever is the greater, and completed before the building or buildings on the plot are occupied:

Provided that, for the period of the construction of any building, the use of a temporary culvert which is constructed so as not to impede the flow of the drain may be made.

26. Unless otherwise agreed by the council, no building shall be so sited as to have a principal frontage abutting on to a street of a less width than 30 ft.

Frontage.

27. A public building shall only be erected where the site conforms with the provisions of the Sixth Schedule to these By-laws.

Public buildings.

28. Unless the council otherwise agrees, the development of any plot shall include the provision of boundary walls, screen walls, fences or other means of enclosure of approved materials, construction and design.

Boundary walls.

Height of boundary walls.

29. (1) Boundary walls, screen walls, fences or other means of enclosure of residential plots shall not be erected to a greater height than 4 ft. 6 in. where abutting on to a street or in front of the building line of the main building, or 6 ft. in any other case.

(2) All other external boundary walls, screen walls, fences, etc., shall be of such a height as the council may require.

Obstruction to view.

30. Nothing in by-law 29 of these By-laws shall be deemed to authorize the formation, laying out, or material widening of any means of access or any erection which creates an obstruction to the view of persons using any street used by vehicular traffic, at or near any bend, corner, junction or intersection so as to be likely to cause danger to such persons.

Waiver as to height.

31. Where the ground on the line of a boundary wall or fence has such a slope or, in the opinion of the council, on the grounds of privacy, amenity, safety or control, it is necessary or advisable to deviate from the heights prescribed in by-law 29 of these By-laws, the council may permit such other height as it considers adequate in the circumstances.

PART III—BUILDING MATERIALS

General.

32. (1) No person shall use or permit or cause to be used in the erection of a building any material which is not—

- (a) of a suitable nature and quality for the purpose for which it is used;
- (b) adequately mixed or prepared;
- (c) applied, used or fixed in a proper manner so as adequately to perform the functions for which it is designed.

(2) Any person who contravenes or fails to comply with the provisions of paragraph (1) of this by-law shall be guilty of an offence.

(3) Without prejudice to any legal proceedings which may be instituted by virtue of paragraph (2) of this by-law, the council may, by written notice served upon the owner of any building in which material is used in contravention of the provisions of paragraph (1) of this by-law, require the removal of any such material.

(4) The use of any type of material or any method of mixing or preparing materials or of applying, using or fixing materials, which conforms with a British Standard or a British Code of Practice or the appropriate Schedule to these By-laws prescribing the quality of material or standards of workmanship shall, except where otherwise required in these By-laws, be deemed to be sufficient compliance with the requirements of this by-law if—

- (a) in the event of more than one such Standard or Code having been issued, the type of material or method used conforms with the latest edition and any published amendments thereto; and
- (b) the use of that type of material or method is appropriate to the purpose and conditions for and in which it is used.

Second-hand material.

33. Unless the council otherwise agrees, no second-hand material shall be used on work to which these By-laws refer.

34 (1) To ensure compliance with the provisions of by-law 32 of these By-laws, the council may elect to carry out or cause to be carried out, any tests which it may deem necessary and the contractor or other person carrying out the work shall provide full facilities for enabling the tests to be satisfactorily completed, and pay all reasonable costs incurred by the council.

Testing of materials.

(2) The council may remove or cause to be removed from the site samples in sufficient quantity for the testing of the materials and methods used.

(3) The council may, for the purpose of securing the due observance of the provisions of these By-laws, serve a notice by affixing it on a conspicuous part of the building or by delivery to the person causing or directing the work, requiring him within two clear days from the service thereof, to furnish the council with proof by means of samples of the materials, adequate tests, or otherwise as specified in the notice, that the materials used or to be used conform with the provisions of these By-laws.

35. Whilst the requirements of by-law 32 of these By-laws generally prescribe for a satisfactory standard of material and workmanship, the recommendations or requirements of any British Standard or Code of Practice will not be taken to supersede the requirements of any of these By-laws.

Application of British Standards and Codes of Practice.

36. The decision of the council shall be final as to whether any intended use of material or proposed method of construction which is not specifically covered by a British Standard, Code of Practice or the appropriate Schedule to these By-laws is comparable therewith.

Other Standards

37. Throughout the progress of any work to which these By-laws apply, every person responsible for the erection of a building, shall ensure by suitable means the safety and protection of all persons and property liable to be affected by the work.

Protection of persons and property.

Building Sites

38. (1) The subsoil of the site of a building shall, whenever the dampness or position of the site renders the precaution necessary, be effectually drained, in a manner which is not detrimental to the adjoining property, or such steps shall be taken as will effectually protect the building from dampness.

Drainage of subsoil.

(2) Where during the making of any excavation for a building an existing drain or spring is severed, adequate precautions shall be taken to prevent the drain or spring from causing dampness to the site of the building.

39. That part of a site to be covered by a building shall be effectively cleared of turf and other vegetable matter.

Preparation of sites.

40. The ground surface enclosed within the external walls of a building shall, unless the exceptional condition of the site or exceptional nature of the ground renders this requirement unnecessary, be—

Prevention of damp.

(a) covered with a layer of concrete composed of cement and fine and coarse aggregate in the proportions of 112 lb. of cement to not more than $3\frac{1}{2}$ cu. ft. of fine aggregate and $7\frac{1}{2}$ cu. ft. of coarse aggregate at least 4 in. thick, properly laid on a bed of hard core; or

Sites filled
with offensive
materials.

Identification
of plot
boundaries.

Foundations
generally.

Strip foundations
for domestic
buildings.

- (b) properly asphalted; or
- (c) covered with an approved material appropriate to the use of the building.

41. Plans submitted for the erection of a building upon a site which has been filled with material impregnated with faecal or other offensive matter or on ground upon which any such material has been deposited, will be rejected by the council unless it is satisfied that the material in question has been removed or has become, or has been rendered harmless.

42. (1) A person erecting a building shall before the erection thereof or at the time of the first inspection prove the boundaries of the plot.

(2) The requirements of this by-law will be satisfied by the identification of survey beacons defining the limits of the plot.

Foundations

43. (1) The foundations of every building shall be—

- (a) so designed and constructed as to sustain the combined dead load of the building and imposed vertical and lateral loads and to transmit these loads to the ground in such a manner that the pressure on the ground shall not cause such settlement as may impair the stability of the building, or of adjoining works or structures; and
- (b) taken down to such a depth or be so designed and constructed as to safeguard the building against damage by swelling, shrinking or erosion of the subsoil.

(2) In the case of a building with heavily loaded foundations, the council may require the substrata formation to be proved.

(3) The dead load and imposed loads, including wind loads, shall be calculated in accordance with the Second Schedule to these By-laws.

(4) Where eccentric loading to foundations of walls occurs the appropriate requirements in the Second Schedule to these By-laws shall apply.

44. (1) The foundations for the load bearing structure of a domestic building where constructed as strip foundations of plain concrete situated centrally under the walls or piers, shall be deemed to satisfy the requirements of subparagraph (1) (a) of by-law 43 of these By-laws if—

- (a) there is no wide variation in the type of subsoil over the loaded area and no weaker type of soil exists below that on which the foundations rest within such a depth as may impair the stability of the structure;
- (b) constructed for pressures according to the type and condition of the subsoil specified in Table 1 of these By-laws and the width of the foundation is not less than that specified in Table 2 of these By-laws for the appropriate load;
- (c) the concrete is composed of cement and well-graded aggregate in the proportion of 112 lb. of cement to not more than 12½ cu. ft. of well-graded aggregate;
- (d) the thickness of the concrete is not less than its projection from the base of the wall or footings, as the case may be, and in no case less than 6 in., except that where the

foundation bed is of hard rock only sufficient concrete need be used to level the foundation to masonry courses:

Provided that in the case of a single storey domestic building constructed with external walls of 6 in. thickness in accordance with by-law 62 of these By-laws, the thickness of the concrete may be reduced to not less than 4 in. if the bearing capacity of the subsoil is not less than $\frac{3}{4}$ ton per sq. ft.;

(e) where the foundations are laid at more than one level, at each change of level the higher foundations extend over and unite with the lower foundations for a distance not less than the thickness of the foundations and in no case less than 12 in.; and

(f) where there is a pier or buttress forming part of a wall, the foundations project beyond the pier or buttress on all sides at least to the same extent as they project beyond the wall.

(2) In determining the conditions of the subsoil for the purposes of Table 1 of these By-laws, the council may require the results of a soil test certified by an approved person or authority.

TABLE 1
GENERAL CLASSIFICATION AND BEARING CAPACITY OF SUBSOILS

Type of Soil	Condition	Max. permissible bearing capacity in tons per sq. ft.
Alluvial; ..	.. Firm	
Made up ground; }	..	
Clay; }	.. Loose or Wet	$\frac{1}{2}$
Red Soil.		
Sand ..	.. Wet or badly drained ..	$\frac{1}{2}$
Red Soil ..	.. Normal	$\frac{3}{4}$
Red Soil ..	.. Firm or hard, dry and well drained	1
Coral ..	.. Soft vesicular	1
Sand ..	.. Dry, well drained or protected ..	1 to $1\frac{1}{2}$
Murram mixture ..	.. Firm and well drained	
Brown shale ..	.. Weathered	$1\frac{1}{2}$
Gravel		
Turf, soft; }	.. .. Compact in layers	
Magadi, soft		
Brown shale ..	.. Unweathered	2
Coral ..	.. Medium hard	
Murram ..	.. Uniform, firm and compact minimum 4 ft. thick in layers	3
Murram black; }	.. Firm minimum 4 ft. thick ..	4
Turf; }		
Magadi		
Magadi, hard; }		
Nairobi soft stone; }	.. Monolithic test-bores required ..	6
Rock, soft.		
Hard Nairobi stone or black-trap	.. Monolithic test-bores required ..	6 to 10

TABLE 2

WALL FOUNDATIONS

Table 1. Bearing capacity in Tons per sq. ft.	Minimum width in in. for total load in tons per lineal ft. of not more than:								
	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	4
$\frac{1}{3}$	18"	27"	36"	45"	54"	72"	—	—	—
$\frac{1}{2}$	18"	24"	24"	30"	36"	48"	60"	72"	—
$\frac{3}{4}$	12"	12"	18"	21"	24"	32"	40"	48"	—
1	9"	12"	12"	15"	18"	24"	30"	36"	48"
$1\frac{1}{2}$	9"	12"	12"	12"	12"	18"	21"	24"	32"
2	9"	9"	9"	12"	12"	12"	15"	18"	24"
3	—	—	Not less than width of wall				12"	12"	18"
4	—	—	—	Not less than width of wall				12"	12"
6 and over	Not less than width of wall								

NOTE—

- (i) For normal domestic buildings of bricks, blocks or stone with normal ceiling heights the wall and imposed loads are not likely to exceed $\frac{3}{4}$ ton per lineal foot if the dwelling house is of one storey and $1\frac{1}{4}$ tons per lineal foot if of two storeys, and foundations calculated on this loading and in conjunction with Table 2 above shall be deemed to satisfy the requirements of by-law 43 of these By-laws.
- (ii) In all other respects the requirements of by-law 43 of these By-laws for the construction of light foundations will be satisfied if constructed to the requirements of British Standard Code of Practice—CP 101, "Foundations and structures for houses, flats and schools of not more than two storeys".
- (iii) For all purposes the permissible loads upon various subsoils contained in Table 1 of these By-laws are given only as a guide to their bearing capacity in general.
- (iv) For the purpose of this by-law, black cotton soil shall be deemed to have no load bearing capacity.
- (v) In the use of Table 1 of these By-laws due regard shall be paid to the direction of dip of laminations of rock formations.

Reinforced concrete foundations.

45. (1) Foundations constructed wholly or in part of reinforced concrete shall satisfy the requirements of by-law 43 of these By-laws in so far as the strength of those parts of the foundation constructed of reinforced concrete are concerned, if the design and construction of the reinforced concrete parts are based upon the recommendations of British Standard Code of Practice—CP 114, "The structural use of normal reinforced concrete in buildings".

(2) For the avoidance of doubt, the requirement of paragraph (1) of this by-law shall be deemed to be satisfied, if the working Rules in the Seventh Schedule to these By-laws, in so far as they apply, are complied with.

General Load-Bearing Requirements

46. (1) The load-bearing structures of a building above the foundations shall be capable of safely sustaining and transmitting the dead load and imposed loads and the horizontal and inclined forces to which it may be subjected without exceeding the appropriate limits of stress for the materials of which it is constructed and without undue deflection.

Load-bearing structures generally.

(2) The dead load and imposed loads, including wind loads, shall be calculated in accordance with the Second Schedule to these By-laws.

(3) This by-law shall not apply to those chimney shafts to which by-laws 120, 121, 122 and 123 of these By-laws apply.

47. Structural steelwork shall be deemed to be sufficient for the purposes of by-law 46 of these By-laws, if the steelwork is designed and constructed in accordance with the relevant Rules given in British Standard 449 "The use of structural steel in buildings", incorporating British Standard Code of Practice—CP 113, "The structural use of steel in buildings".

Structural steelwork.

48. (1) Structural work of reinforced concrete shall be deemed to be sufficient for the purposes of by-law 46 of these By-laws, if the design and construction are based upon the relevant recommendations of British Standard Code of Practice—CP 114 "The structural use of normal reinforced concrete in buildings", and British Standard Code of Practice—CP 115 "The structural use of pre-stressed concrete in buildings".

Structural work of reinforced concrete.

(2) For the avoidance of doubt, the requirement of paragraph (1) of this by-law shall be deemed to be satisfied, if the working Rules in the Seventh Schedule to these By-laws, in so far as they apply, are complied with.

49. Structural work of timber shall be deemed to be sufficient for the purposes of by-law 46 of these By-laws if—

Structural work of timber.

- (a) the design and construction are based upon the recommendations of British Standard Code of Practice—CP 112 "The structural use of timber in buildings"; or
- (b) timbers of a kind specified in the Ninth Schedule to these By-laws are used in accordance with the provisions therein.

50. Structural work in one of the aluminium alloys specifically referred to as a permissible material in the Report on the structural use of Aluminium Alloys in Buildings published by the Institution of Structural Engineers in September 1950, (as amended from time to time) shall be deemed to be sufficient for the purposes of by-law 46 of these By-laws, if the work is designed and constructed in accordance with the requirements of that Report.

Structural work of aluminium.

51. (1) A wall, pier, or column shall be deemed to be sufficient for the purposes of by-law 46 of these By-laws, if its design and construction are based upon the relevant recommendations of the British Standard Code of Practice—CP 111 "Structural recommendations for load-bearing walls".

Walls, piers and columns of brick, stone, etc.

(2) Except where otherwise provided in these By-laws, walls of a kind specified in the Third Schedule to these By-laws shall, if constructed in accordance with the relevant Rules in that Schedule, be deemed to be sufficient for the purposes of by-law 46 of these By-laws.

(3) Where the Third Schedule of these By-laws is disregarded in so far as it relates to dimensions for the construction of load-bearing walls and such walls are designed in accordance with paragraph (1) of this by-law, a design of the wall showing their conformity with the Rules of the said Schedule and a certificate of good structural practice must be submitted by a designer, whose name is included in the register referred to in the Eighth Schedule to these By-laws, certifying that the work is entirely in accordance with the aforementioned Code of Practice. A certificate so issued will generally be accepted in lieu of the submission of calculations, but in certain circumstances the council may also require the submission of calculations.

Walls

Walls generally.

52. All walls built of stone, bricks, or blocks shall be hard, durable and suitable for the purpose for which they are used, and shall be of a resistance to crushing as laid down in rule 3 of the Third Schedule to these By-laws:

Provided that—

- (i) where a wall is required to be 13 in. thick and not less frequently than every third course, each stone or block extends throughout the thickness of the wall, and the intervening courses are properly bonded with stones or blocks of suitable size in a manner which secures the required stability of the wall; and
- (ii) where a wall is required to be of greater thickness than 13 in., each stone or block no less frequently than in every fourth or fifth course from alternate faces of the wall, extends into the wall not less than 12 in. and the remaining stones of these two courses are bonded into the wall in a manner described in subparagraph (i) to this by-law,

the thickness laid down in the Third Schedule to these By-laws may be reduced by $2\frac{1}{2}$ per cent, but in no circumstances other than provided for in these By-laws, shall the thickness of any external, separating or party wall be of less thickness than $8\frac{1}{2}$ in.

Dimensions.

53. (1) All dimensions given in these By-laws for stone, bricks or blocks are the actual bedding area and are exclusive of any applied facings or additives of any kind whatsoever. Where undressed stonework is employed, all stones must be roughly dressed to provide no greater variation than $\frac{1}{4}$ in. to the thickness of the wall required.

(2) Where any stonework is employed bedding joints shall not exceed $\frac{1}{8}$ in. in thickness and vertical joints $\frac{1}{2}$ in., and for bricks $\frac{1}{2}$ in. and $\frac{3}{8}$ in. respectively. The mortar for both shall be of no less strength than provided for in rule 10 of the Third Schedule to these By-laws.

(3) The council may require any unfaced external stone wall or other wall which may be temporarily exposed to the public view to be reasonably faced or rendered. In requiring this the council shall have regard to the period during which the face of the wall will be so exposed.

Walls and Partitions of Blocks and Slabs

54. The requirements of by-laws 46 and 51 of these By-laws shall not apply to the construction of non-load-bearing walls or partitions or any individual panel, and the requirements of by-law 32 of these By-laws will generally be satisfied for stability, if the size of the walls or partitions or individual panels are such that one dimension, either the length or the height, is not greater than the dimensions shown in the following table, and provided that for blocks up to 3 in. in thickness, alternate courses are reinforced in an approved manner.

Non-load-bearing walls, partitions and individual panels.

TABLE

2"	block	9'-0"
2½"	"	10'-0"
3"	"	12'-0"
4"	"	14'-0"
4½"	"	15'-0"
6"	"	20'-0"
8¾"	"	25'-0"

Provided that—

- (i) where both the length and the height of a wall, partition or individual panel, would exceed these dimensions it must be divided into panels by vertical and horizontal supports of adequate strength and rigidity so that the above condition is fulfilled;
- (ii) the walls, partitions or individual panels shall be supported along two vertical opposite ends and, where required, horizontal;
- (iii) the supported ends shall be attached to the main structure by bonding, inserting into a groove or by other approved method of fixing.

55. Where the council so requires, all unfaced stone, bricks, blocks and slabs used in external walls must be faced externally by rendering not less than half an inch thick or similar treatment and where the permeability of the blocks requires, the addition of a suitable waterproofing compound shall be necessary to satisfy the requirements of by-law 65 of these By-laws.

Rendering.

56. Hollow blocks and slabs shall not be used in substructure foundation walls.

Foundation walls.

57. Hollow blocks shall not be used in the wethes of chimney construction.

Chimneys.

58. All exposed cavities at walls' ends and returns shall be sealed.

Cavities.

59. (1) For both load and non-load-bearing walls the mortar shall be in accordance with the strengths stated in—

Mortar.

- (a) British Standard Code of Practice—CP 122 for "walls and partitions of blocks and slabs", or

(b) British Standard Code of Practice—CP 121. 201 "Masonry walls ashlar with natural stone or with cast stone", or

(c) British Standard Code of Practice—CP 111 "Structural recommendations for load-bearing walls",

whichever is applicable to the form of construction used.

(2) Where the stress in the wall does not require a mortar of greater strength, mortar for use in load-bearing walls shall, satisfy the requirements of these By-laws, if of not less strength than 1 part cement to 6 parts fine aggregate.

Chases.

60. Chases shall not be cut so as to weaken the structural strength of the building below the design limit. In solid blocks the depth of horizontal chases shall not exceed one-sixth the thickness of the block and one third for vertical chases.

Non-load-bearing walls.

61. Concrete blocks used in non-load-bearing external panel walls must comply with the strength requirement of rule 3 (1) (a) of the Third Schedule to these By-laws. The crushing strength of concrete blocks shall be determined in the manner provided in the British Standard Specification 2028 or any amendment from time to time thereto.

External walls in domestic buildings.

62. (1) The requirements of by-law 46 of these By-laws for external load-bearing walls of the top or only storey in domestic buildings where such storey is to be used only for living accommodation shall be satisfied if such walls are constructed in accordance with this by-law.

(2) If the height from the level of the floor of the storey to that of the ceiling does not exceed 9 ft., and the floor, if not the ground floor, is constructed of reinforced concrete throughout and extends over the walls of the storey below, the walls of such top or only storey may be reduced to 6 in. in thickness with a tolerance of 1/16th in., if built of square dressed stone, bricks or concrete blocks and supported at intervals of not more than 12 ft. by a buttressing wall or a position of the wall at least 12 in. in thickness for a length of at least 12 in.:

Provided that such walls may be 10 ft. in height and buttressed at intervals of up to 15 ft. if the bearing stresses thereof are not thereby exceeded, and—

(i) where a timber roof construction is used, a ring beam is provided at ceiling level not less than 6 in. in both breadth and depth reinforced with two half-inch bars evenly distributed in the bottom having not less than $\frac{1}{4}$ in. cover, and the roof security tied thereto, or

(ii) a reinforced concrete flat roof is imposed thereon.

(3) For the purpose of the foregoing provisions of this by-law, a partition wall shall not be deemed to be a buttressing wall unless there be at least a length thereof of not less than 6 in. bonded into the outer wall for its full height and is not less than 6 in. thick with a tolerance of 1/16th of an inch.

63. (1) Except, as provided for in by-laws 86 and 93 of these By-laws, a party wall or separating wall built of bricks, blocks or stone, shall not be of a less thickness than 8½ in.: Party or separating walls.

Provided that in the case of a domestic building constructed with external walls of 6 in. thickness in accordance with by-law 62 of these By-laws, the party wall or separating wall may also be constructed in accordance with the provisions of that by-law.

(2) Any wall, which is contiguous with a boundary, shall fulfil the requirements of these By-laws for party and external walls, and the thickness shall not be less than that heretofore described and in any case the wall shall be constructed as to have, in accordance with the Fourth Schedule to these By-laws, the notional period of fire resistance of not less than the specified period.

64. (1) All boundary walls and fences shall be constructed of sound approved building materials and shall be erected with sufficient supports securely fixed to ensure the stability of the structure. Boundary walls and fences.

(2) All walls and fences shall be erected in a vertical plane and fences shall be suitably coated with paint or preservative of approved composition.

Walls—Resistance to Weather and Damp

65. Every external wall of a domestic, public or warehouse class building, including any parapet wall thereto, shall adequately resist the penetration of rain. External walls—weather resistance.

66. No wall, pier or column of a building to which by-law 65 of these By-laws applies, shall permit the passage of moisture from the ground to the inner surface of any storey of the building, or to any part of the building that would be harmfully affected by such moisture

67. The requirements of by-law 66 of these By-laws shall be deemed to be satisfied, if every wall of the building in contact with the ground is provided with—

(a) a damp-proof course which in the case of an external wall is at a height of not less than 6 in. above the surface of the ground adjoining the wall; and

(b) such other additional barriers to moisture in continuation of the damp-proof course required by paragraph (a) of this by-law as may be necessary to ensure that dampness from the ground cannot reach any timbers or other material that would be harmfully affected by it or the interior of the walls of any storey of the building, other than a cellar used for storage purposes only.

68. (1) The cavity in every cavity wall, built of bricks or blocks, shall extend downwards to at least 6 in. below the level of the lower damp-proof course in that wall. Prevention of damp in cavity walls.

(2) In every cavity wall wherever the cavity is bridged, a damp-proof course, or flashing so arranged, that moisture is directed away from the inner leaf of the wall, shall be inserted unless the bridging occurs at a place protected by the roof.

Fire Resistance—General

Notes.—Several of the following by-laws require that the various parts of a building shall resist fire for specified periods. These requirements so far as walls are concerned shall be satisfied *either* if the construction is in accordance with the Third Schedule of these By-laws dealing with traditional methods of building, *or* if the construction is in accordance with the Fourth Schedule of these By-laws (which lists most of the common forms of construction). If the construction is not in accordance with either of the aforesaid Schedules, then the fire resistance must be shown to be adequate by reference to a test on a similar form of construction in accordance with British Standard No. 476 under by-laws 69 and 70 of these By-laws.

Interpretation.

69. (1) Save as provided in paragraph (b) of by-law 72 and by-law 75 of these By-laws, any requirement in these By-laws, that a structural part of a building shall have a fire resistance of a specified period shall be construed as requiring that that part shall be capable of resisting the action of fire thereon for that period under the conditions of the test appropriate to that part under British Standard 476 "Fire Tests on Building Materials and Structures" and any part of a building shall be deemed to have the requisite fire resistance if—

(a) it is so constructed as to have, in accordance with the Fourth Schedule of these By-laws, a notional period of fire resistance not less than the specified period; or

(b) a similar part made to the same specification as that part is proved to have the requisite fire resistance under the conditions of the aforesaid test.

(2) For the purpose of this by-law, resistance to the action of fire in the case of a wall shall be taken to mean resistance by that wall to fire on one side at a time, therefore in by-law 72 of these By-laws, resistance to internal fire or external fire in relation to a wall shall be taken to mean resistance to fire only on the inside or the outside of that wall as the case may be.

(3) The expression "non-combustible throughout" in relation to a wall means composed entirely, apart from any combustible internal lining, of non-combustible material or materials.

(4) A wall required by these By-laws to be externally non-combustible shall be either a wall non-combustible throughout or one having non-combustible external panels or covering.

70. Any wall complying (in respect of its stability) with the Third Schedule to these By-laws, shall be deemed to satisfy all requirements relating to the non-combustibility and fire resistance of external walls provided for in by-laws 72, 77, 78 and 80 of these By-laws and the similar requirements in respect of the walls referred to in by-laws 73, 78 and 81 of these By-laws.

Fire Resistance—Small Houses

Walls complying with Third Schedule of these By-laws.

71. In any of these By-laws relating to fire resistance "small house" means a one or two-storeyed dwelling house of a capacity of less than 20,000 cu. ft., but does not include a flat.

72. Every external wall of a small house shall—

External walls
of small houses.

- (a) comply with the requirements as to non-combustibility and fire resistance specified as appropriate thereto in column (2) of the Table set out below according to the distance of the wall from the nearest boundary of the plot as shown in column (1) of that Table; and
- (b) have a resistance to internal fire of half an hour, for the determination of which the conditions of test referred to in paragraph (1) of by-law 69 of these By-laws shall apply with the modification that the limit of temperature rise on the unexposed face as specified in paragraph 11c of British Standard 476 "Fire Tests on Building Materials and Structures" shall not apply.

TABLE

<i>Not less than</i>	<i>Less than</i>	<i>(1) Distance of wall in ft. from nearest boundary of plot</i>	<i>(2) Appropriate requirements as to non-combustibility and fire resistance</i>
10	—	10	No requirement.
5	—	5	To be externally non-combustible.
3	—	3	To be non-combustible throughout and to have a resistance to external fire of half-an-hour.

73. (1) Subject to the provisions of paragraph (2) of this by-law, in a building comprising two or more small houses, a wall separating such houses, shall be non-combustible throughout and shall have fire resistance of one hour.

Walls
separating
small houses

(2) (a) Where the external walls of a building comprising more than two small houses have combustible external panels of covering, the walls separating successive groups of not more than two such houses shall—

- (i) have a fire resistance of two hours;
- (ii) extend not less than 9 in. beyond the outer surface of the external walls; and
- (iii) (unless the roof is of solid or hollow slab construction of non-combustible material) be carried not less than 15 in. above the roof (measured at right angles to the slope).

(b) Where the external walls of a building comprising more than four small houses have combustible frames but non-combustible external panels or covering, the walls separating successive groups of not more than four such houses shall have a fire resistance of two hours and no part of the combustible construction of the external walls shall extend across the ends of any of the separating walls.

(c) Where the external walls, including any external panels or covering, of a building comprising more than eight small houses are non-combustible, the walls separating successive groups of not more than eight such houses shall have a fire resistance of two hours.

Further provisions as to walls separating small houses.

74. (1) No combustible material shall be built into or carried through or over a separating wall to which by-law 73 of these By-laws applies, other than—

- (a) the ends of wooden beams, joists or purlins which are properly protected by brickwork or other solid and non-combustible material not less than 4 in. thick, or by a beam box of iron or other suitable non-combustible material; or
- (b) tiling or slating battens properly embedded in mortar or other suitable material.

(2) Where any separating wall to which by-law 73 of these By-laws relates is not carried up above the underside of the covering of the roof, the slates or other covering or slab shall, where practicable, be properly and solidly bedded in mortar on the top of the wall.

Floors and interior walls of small houses.

75. (1) In every small house of two storeys, the upper floor shall be so constructed as to be capable of satisfying the test for fire resistance specified in British Standard 476 "Fire Tests on Building Materials and Structures" as to freedom from collapse for half an hour, and as to rise of temperature and freedom from cracks or similar failures for 15 minutes.

(2) Any floor to which paragraph (1) of this by-law applies, shall be deemed to have the fire resistance required by that paragraph, if it is constructed in accordance with the relevant provisions of Table B of the Fourth Schedule to these By-laws.

(3) In every small house, all load-bearing walls, other than a wall to which by-laws 72, 73, 74 and 76 of these By-laws apply, shall have a fire resistance of half an hour for the determination of which the conditions of test referred to in paragraph (1) of by-law 69 of these By-laws shall apply subject to the modification, that the limit of temperature rise on the unexposed face as specified in paragraph 11c of British Standard 476 "Fire Tests on Building Materials and Structures" shall not apply.

Garages attached to dwellings.

76. (1) For the purpose of this by-law a garage means a covered space capable of accommodating a motor car, enclosed on more than two sides or with a room above.

(2) Where a garage is built as part of a dwelling or attached thereto—

- (a) the underside of the floor of the room above the garage, shall be properly ceiled with non-combustible material having a fire resistance of not less than half an hour;
- (b) the material covering the roof of the garage shall be as specified in by-law 94 of these By-laws;
- (c) all walls separating the garage from the remainder of the building, not being walls to which by-laws 73, 81 and 87 of these By-laws apply shall have a fire resistance of not less than half an hour, and be of non-combustible material and contain no combustible linings;
- (d) an opening in any wall referred to in subparagraph (c) hereof shall—
 - (i) at its lowest point be at least 4 in. above the level of the floor of the garage;

- (ii) be protected by self-closing doors, having a fire resistance of half an hour; and
- (iii) be so arranged that access is in accordance with by-law 163 of these By-laws.

(3) A door for the purpose of subparagraph (d) (ii) of paragraph (2) of this by-law shall be deemed to be self-closing, if it is hung on efficient rising butts, and shall be deemed to have the requisite fire resistance if constructed in accordance with the specification in British Standard 1459: Part 3, for doors having a fire resistance of half an hour.

Fire Resistance of Buildings Other Than Small Houses

77. The external wall of any building, other than a small house, shall, unless otherwise provided for in these By-laws, be non-combustible throughout and have a fire resistance of two hours.

General rule as to external walls, other than walls of small houses.

78. (1) Every external wall of a domestic or public building of one storey, not being a small house, shall, if the building has a capacity specified in column (1) of Table A set out below, and the distance of the wall from the nearest boundary of the plot corresponds with any distance specified in column (2) of that Table opposite the appropriate specification in column (1), comply with the requirements as to non-combustibility and fire resistance specified as appropriate thereto in column (3) of that Table.

Modifications for external walls of certain one storey buildings.

TABLE A

(1) Capacity of building in cu. ft.		(2) Distance of wall in feet from nearest boundary of the plot		(3) Appropriate requirements as to non-combustibility and fire resistance
Not less than	Less than	Not less than	Less than	
—	18,000	10	—	No requirement.
		5	10	To be externally non-combustible.
		3	5	To be externally non-combustible and to have a fire resistance of one hour.
18,000	36,000	20	—	No requirement.
		10	20	To be externally non-combustible.
		5	10	To be externally non-combustible and to have a fire resistance of one hour.
36,000	—	10	—	To be externally non-combustible and, unless it is an office building more than 30 ft. from the nearest boundary of the plot, to have a fire resistance of one hour.

(2) Every external wall of a building of the warehouse class, not intended to be used wholly or predominantly for storage, and comprising only one storey shall comply with the requirements as to non-combustibility and fire resistance specified as appropriate thereto in column (2) of Table B set out below according to the distance of the wall from the nearest boundary of the plot as shown in column (1) of that Table.

TABLE B

(1)	(2)
<i>Distance of wall from nearest boundary of plot</i>	<i>Appropriate requirements as to non-combustibility and fire resistance</i>
<i>Not less than</i>	<i>Less than</i>
20 ft. or a distance equivalent to half the height of the building (whichever is the greater).	40 ft. or a distance equivalent to the height of the building (whichever is the greater).
40 ft. or a distance equivalent to the height of the building (whichever is the greater).	—
(3) Where a building, other than a small house, is completely separated into two or more parts by fire-division walls complying with by-law 84 of these By-laws, the requirements of paragraph (1) or paragraph (2) of this by-law shall be deemed to be satisfied, if the external walls of each such part, have the non-combustibility and degree of fire resistance appropriate in the case of an entire building of the same cubic capacity as that part.	
Modification for external walls of certain buildings of more than one storey.	79. Where an external wall of a domestic building of two or more storeys, other than a shop or small house, is a panel wall supported in a structural frame of metal or reinforced concrete and is constructed of non-combustible material and is not less than 10 ft. or a distance equivalent to half the height of the building, whichever is the greater, from the nearest boundary or in the case of existing premises from those premises, the frame and panel of such wall shall have a fire resistance of one hour.
Modification for external walls of large storage buildings.	80. Every external wall of a building of the warehouse class, intended to be used wholly or predominantly for storage shall, if the capacity of the building exceeds 250,000 cu. ft., or if its height exceeds 75 ft., be non-combustible throughout and have a fire resistance of four hours: Provided that where a building is completely separated into two or more parts by fire-division walls complying with by-law 84 of these By-laws, by-law 84 shall apply as if each such part were a separate building.
Separating walls.	81. (1) This by-law shall apply to walls separating houses or other buildings, not being walls, to which by-law 73 or by-law 86 of these By-laws apply. (2) The wall shall be non-combustible throughout.

(3) The wall shall, if constructed for the separation of domestic buildings, other than shops, have a fire resistance of four hours, and in any other case it shall have a fire resistance of six hours.

(4) Where the council agrees to an opening in a wall, it shall be protected by doors or shutters having a fire resistance of half the period required for that wall.

(5) No combustible material shall be built into or carried through or over the wall, other than—

- (a) the ends of wooden beams, joists or purlins which are properly protected by brickwork or other solid and non-combustible material not less than 4 in. thick, or by a beam box of iron or other suitable non-combustible material; or
- (b) tiling or slating battens properly embedded in mortar or other suitable material.

(6) Except as provided for in by-law 82 of these By-laws, if the roofs of the buildings separated by the wall, are not of solid slab or are of hollow slab construction of non-combustible material—

- (a) the wall shall, if either of the buildings separated by it is a public building or a building of the warehouse class, be carried up above the underside of the covering of the roof for a distance of at least 18 in. (measured at right angles to the slope);
- (b) the wall shall, if the buildings are domestic buildings and either of them comprises more than five storeys, be carried up above the underside of the covering of the roof for a distance of at least 12 in. (measured at right angles to the slope).

(7) In any case other than one to which paragraph (6) of this by-law applies, if the wall is not carried up above the underside of the covering of the roof, the slates or other covering or slab shall be properly and solidly bedded in mortar on the top of the wall.

82. If a building is capable of being let in different tenancies, and the roof of the building is throughout of non-combustible materials, the internal dividing walls shall comply with the requirements for a separating wall, except that the requirements of paragraphs (6) (a) and (b) of by-law 81 of these By-laws shall not apply.

Buildings
erected on
single plot for
different
tenancies.

83. Buildings used predominantly for storage shall be divided internally with fire-division walls, so that, no floor area exceeds 15,000 sq. ft. and no cubic capacity is greater than 250,000 cu. ft.

Fire-division
of warehouses.

84. (1) Every fire-division wall in a building shall comply with paragraphs (2), (4), (5), (6) and (7) of by-law 81 of these By-laws and with paragraph (2) of this by-law.

Fire-division
walls.

(2) In a building of the warehouse class for use wholly or predominantly for storage, the wall shall have a fire resistance of four hours, and in any other building, it shall have a fire resistance of two hours.

85. No offices shall extend to more than 10,000 sq. ft. in area at any level of floor, unless separated from all other parts of the same building by fire-division walls.

Fire-division
of offices.

Walls
separating
flats.

86. A wall constructed for the separation of flats within a building (other than a load-bearing wall to which by-law 87 of these By-laws applies) shall be non-combustible throughout and have a fire resistance of—

- (a) one hour if the building is a domestic building intended to be used wholly or predominantly for human habitation and exceeds either 50 ft. in height or 2,500 sq. ft. on any one storey in floor area;
- (b) half an hour in any other case.

Fire resistance
of floors,
columns, beams
and certain walls.

87. (1) In every building, other than a small house, which comprises more than one storey, and is of a class and description specified in columns (1) and (2) of the following Table—

- (a) every floor above the lowest storey;
- (b) every load-bearing wall, other than an external wall, wall separating buildings or fire-division wall;
- (c) every column and beam, other than one to which by-law 92 of these By-laws applies; and
- (d) every wall enclosing a common stairway or a lift shaft;

shall have the fire resistance specified in column (3) of the said Table in relation to the class and description of a building specified in columns (1) and (2) respectively:

Provided that—

- (i) where more than one period of fire resistance would be applicable, according to whether regard is had to the height, floor area or capacity of the building, the longer or longest period shall be taken to be the required period of fire resistance; and
- (ii) where a building is completely separated into two or more parts by fire-division walls complying with by-law 84 of these By-laws, or comprises two or more dwellings, shops or other premises (not being individual flats) the requirement of this paragraph shall apply to each such part, dwelling, shop or premises as if it were a separate building.

(2) Every opening in an internal wall enclosing a common stairway or a lift shaft shall be protected by doors or shutters having a fire resistance of not less than half the period required for that wall, but under no circumstances the doors or shutters shall have a fire resistance of less than half an hour.

(3) In this by-law—

“common stairway” means a stairway intended for common use in a building for access to a storey capable of being let in separate tenancies, or where more than ten persons are employed on such storey; and

“floor area” means in relation to a building the floor area of any one storey in that building.

TABLE

<i>Class of Building</i>	<i>Height, cubic capacity, floor area (of any one storey)</i>	<i>Fire Resistance</i>
(1)	(2)	(3)
Domestic buildings intended to be used wholly or predominantly for human habitation.	<p>(a) Exceeding two storeys but not exceeding 50 ft. in height, or (b) Exceeding 1,000 sq. ft. but not exceeding 2,500 sq. ft. in floor area ..</p>	$\frac{1}{2}$ hour
	<p>(a) Exceeding 50 ft. in height, or (b) Exceeding 2,500 sq. ft. in floor area ..</p>	1 hour
Domestic buildings not intended to be used wholly or predominantly for human habitation.	<p>(a) Exceeding 50 ft. but not exceeding 75 ft. in height, or (b) Exceeding 50,000 cu. ft. but not exceeding 125,000 cu. ft. in capacity ..</p>	$\frac{1}{2}$ hour
	<p>(a) Exceeding 75 ft. in height, or (b) Exceeding 125,000 cu. ft. in capacity ..</p>	1 hour
Public buildings and buildings of the warehouse class not used wholly or predominantly for storage.	<p>(a) Not exceeding 50 ft. in height, or (b) Exceeding 50,000 cu. ft. but not exceeding 125,000 cu. ft. in capacity ..</p>	$\frac{1}{2}$ hour
	<p>(a) Exceeding 50 ft. but not exceeding 75 ft. in height, or (b) Exceeding 125,000 cu. ft. but not exceeding 250,000 cu. ft. in capacity, and not exceeding 7,500 sq. ft. in floor area ..</p>	1 hour
	<p>(a) Exceeding 75 ft. in height, or (b) Exceeding 250,000 cu. ft. in capacity, or (c) Exceeding 7,500 sq. ft. in floor area ..</p>	2 hours
Buildings of the warehouse class used wholly or predominantly for storage.	<p>(a) Exceeding 25 ft. but not exceeding 50 ft. in height, or (b) Exceeding 25,000 cu. ft. but not exceeding 50,000 cu. ft. in capacity ..</p>	$\frac{1}{2}$ hour
	Exceeding 50,000 cu. ft. but not exceeding 125,000 cu. ft. in capacity ..	1 hour
	<p>(a) Exceeding 50 ft. but not exceeding 75 ft. in height, or (b) Exceeding 125,000 cu. ft. but not exceeding 250,000 cu. ft. in capacity, and not exceeding 7,500 sq. ft. in floor area ..</p>	2 hours
	<p>(a) Exceeding 75 ft. in height, or (b) Exceeding 250,000 cu. ft. in capacity, or (c) Exceeding 7,500 sq. ft. in floor area ..</p>	4 hours

Ceilings
of public
buildings

88. Public buildings of the types defined in Groups III and IV of the Sixth Schedule of these By-laws, shall have ceilings with half hour fire resistance, and where, required by the council on account of fire hazard, similar provisions may be required for other public buildings.

Stairs for two
or more
dwellings.

89. In the case of a building containing two or more dwellings, every flight of stairs and every landing forming part of a main stairway intended for common use by the occupants of two or more such dwellings, shall comply with the requirements specified in column (2) of the Table set out below in relation to the description of the building specified in column (1) of that Table.

TABLE

Description of building (1)	Requirement for stairway (2)
Exceeding 50 ft. in height or exceeding on any one storey, 2,500 sq. ft. in floor area.	To be constructed of non-combustible material having the same fire resistance as that required for the walls of the building in which the stairs are provided.
Neither exceeding 50 ft. in height nor exceeding on any one storey, 2,500 sq. ft. in floor area.	To be constructed of non-combustible material, or to have a fire resistance of one hour.

Fire Resistance—Miscellaneous Provisions Applying to all Buildings

Fire-stops in
cavity walls.

90. (1) In every cavity wall built wholly or partly of combustible materials the cavity between any leaves formed of or containing combustible material, shall be fire-stopped at the junction of the wall with any other wall or with any floor, ceiling or roof and, if the wall exceeds 15 ft. in length, at intervals of not more than 15 ft.

(2) Any such cavity wall may be fire-stopped by blocking the cavity with non-combustible material.

Opening in
external walls.

91. (1) Unless the council otherwise agrees, openings shall only be permitted in external walls, where such walls are not within the distances prescribed hereunder from a plot boundary, other than one abutting onto a street—

- (a) 7 ft. 6 in. in a central area;
- (b) 5 ft. in any residential area; and
- (c) 10 ft. in any other area:

Provided that on a return wall or one at right angles to the nearest plot boundary, the distance of the opening from such boundary, may be reduced to 2 ft. 6 in. or if the separating wall projects 2 ft. beyond the face of such return wall, the distance from the boundary may be reduced to the thickness of the separating wall.

(2) In the case of a building, other than a dwelling house of not more than two storeys, where any part of an opening in an external wall is vertically above an opening in an adjoining storey, suitable provision shall be made to prevent the spread of fire from the lower to the upper opening.

(3) The requirements of paragraph (2) of this by-law shall be deemed to be satisfied if—

- (a) the bottom of the higher opening is not less than 3 ft. above the top of the lower opening and not less than 2 ft. above the upper surface of the floor separating the storeys; or
- (b) a balcony of non-combustible material with a solid floor or some similar horizontal protection is constructed between the two openings to project 2 ft. from the wall and extend laterally beyond each limit of the overlap of the openings in such a way that—
 - (i) where the lower or neither opening continues beyond that limit, for not less than 1 ft.; and
 - (ii) where the upper opening continues beyond that limit, for not less than 2 ft.

92. Any part of a structural frame, any beam or column, carrying an external wall, a wall separating buildings or a fire division wall, shall have the same fire resistance as that required by these By-laws for the wall it carries.

Structural members supporting certain walls.

93. Where the external walls of buildings on adjacent plots are contiguous with a common plot boundary, and the walls are panel walls supported in a structural frame of metal or reinforced concrete and otherwise fulfil the requirements for a separating wall, the requirements of by-law 81 of these By-laws shall be satisfied, if the combined thickness of the panels provides the full fire resistance required by these By-laws.

External panel walls in frame structures.

Roofs

94. (1) In every building of the warehouse class, in every public building or dwelling house exceeding 36,000 cu. ft. in capacity and in dwelling houses forming part of a block of more than two, the roof shall be so covered as to afford adequate protection against the spread of fire into the building or to adjoining buildings.

Roofs—protection against fire.

(2) In every building other than a building to which paragraph (1) of this by-law applies, the roof shall be so covered; or the building shall be so isolated from other buildings, as to afford adequate protection against the spread of fire into the building or to adjoining buildings.

(3) A roof shall be deemed to satisfy the requirements of paragraphs (1) and (2) of this by-law, if it is covered with any one or more of the following materials—

- (a) natural slates, or slabs of stone;
- (b) tiles or slabs of burnt clay or concrete;
- (c) slates, tiles or sheets of asbestos cement;
- (d) corrugated sheets of galvanized steel, or of other not less suitable material, of an approved thickness;
- (e) metal sheeting covered on both inner and outer surfaces with bituminous material, or a similar approved weather-resisting protective covering;
- (f) glass tiles or sheets, or glass bricks or blocks in concrete or metal frames;

- (g) lead, copper, zinc or aluminium, of an approved thickness;
- (h) asphalt mastic with sanded or gravelled finish containing not less than 83 per cent of mineral matter and laid not less than $\frac{1}{4}$ in. thick on a suitable base;
- (i) asbestos based roofing felt which conforms with British Standard 747;
- (j) organic based roofing felt laid directly on a base of non-combustible material, not less than $\frac{1}{2}$ in. thick; and
- (k) organic based roofing felt covered with non-combustible material, not less than $\frac{1}{2}$ in. thick, or with bituminous macadam composed of fine gravel or stone chippings with not greater than 7 per cent of bituminous material.

(4) A building, shall be deemed to satisfy the requirements of paragraph (2) of this by-law as to isolation, if the distance between the building and the boundary of the nearest adjacent plot is equal to not less than twice the height of the building, except that in the case of a small house as defined in by-law 71 of these By-laws, such distance may be reduced to 10 ft.

Roof access
95. If a roof to which by-law 94 of these By-laws applies, has a ceiling, the latter shall be provided with a door or scuttle to allow access to the roof space.

96. The roof of a building shall be weatherproof.

Roofs to be weatherproof
Roof coverings.
97. For roof coverings, the requirements of by-law 96 of these By-laws shall be satisfied if constructed in accordance with the relevant Rules specified in the Fifth Schedule to these By-laws.

Floors

Floors—resistance to moisture: ventilation.
98. (1) In every domestic building, in every public building and in every building of the warehouse class intended to be used for the habitual employment of persons in any manufacture, trade or business, the lower or lowest floor in every part of the building, shall adequately resist the passage of moisture from the ground.

(2) Subject to by-law 99 of these By-laws, a floor shall be deemed to satisfy the requirements of this by-law if—

(a) being a solid floor, the floor itself (or its finish) is impervious to moisture or there is inserted within the thickness of the floor a damp-proof layer; or

(b) being a timber floor—

(i) there is between the underside of the lowest timbers in the floor and the ground a space affording through ventilation; such space being not less than 3 in. in every part; and

(ii) the floor is protected from moisture rising through any wall, pier, column or chimney, into which or in contact with which, it is built.

99. (1) Except as hereinafter provided in this by-law, black cotton soil under and for the area of any solid floors, shall be entirely removed down to the rock or other approved level.

(2) The area so excavated shall be filled with suitable hard core properly consolidated and blinded with fine material to a level finish

(3) Where, the depth of the black cotton soil does not exceed 6 ft. the requirements of this by-law shall be satisfied, if that soil is removed for 3 ft. or its actual depth, and a site overlay 4 in. thick of consolidated murram or 3 in. thick of concrete of not less strength than 1:4:8 is provided and the remaining excavation is filled in the manner described in paragraph (2) to this by-law.

(4) Where a suspended floor is provided, the level of the black cotton soil shall be no higher than 6 in. below the level of the underside of the floor, except that, in the case of a timber floor it shall be no less than 18 in. below that level.

100. In any building, all structural parts, which are of timber, shall be properly protected against termites.

Protection
against
termites.

Chimneys, Flues and Hearths

101. Every chimney, flue, pipe and stove, the back and jamb of every fireplace opening, and every hearth shall be constructed of suitable non-combustible materials so put together and arranged as to prevent the ignition of any part of the building.

Materials.

102. By-laws 103 to 115 inclusive of these By-laws shall not apply—

Exceptions.

- (a) to any chimney for the furnace of a steam boiler, engine, brewery, distillery or a factory;
- (b) to any chimney which is so constructed as not to be capable of use, except in connexion with a fire or stove which burns gas or charcoal only; or
- (c) to any chimney which does not form part of the structure of a building.

103. (1) Every fireplace opening shall have a hearth which shall—

Hearths

- (a) extend under and in front of the opening;
- (b) project at least 16 in. from the chimney breast and extend at each side at least 6 in. beyond the opening;
- (c) be not less than 6 in. thick; and
- (d) where the hearth is in contact with a floor of combustible material, be so laid that the upper surface of the portion in front of the fireplace opening is not lower than the floor.

(2) No timber or other combustible material other than timber fillets supporting a concrete hearth shall be placed under any hearth constructed in connexion with a fireplace opening within a distance of 10 in., measured vertically from any point on the surface of the hearth.

(3) Nothing in this by-law, shall prevent the construction of a pit as an ash container for a fire, if the pit is constructed of brick or concrete not less than 2 in. thick which rests solidly upon the ground and has no combustible material nearer to the inner surface of any of its sides than—

- (a) 3 in. where that surface is distant not less than 12 in. (measured horizontally in any direction) from the fire; or

(b) 10 inches where that surface is less distant than as aforesaid.

Jambs.

104. The jamb on each side of a fireplace opening shall be not less than 6 in. wide with a tolerance of 1/16th of an inch.

Lintels, etc.

105. A sufficient arch or lintel of brick, stone or other hard and suitable non-combustible material, or a sufficient bar of steel, wrought iron or other not less suitable metal, shall be built over the fireplace opening to support the chimney breast.

Thickness of back of openings.

106. (1) Where a fireplace opening is in an external wall, the back of the opening shall be not less than 4 in. thick.

(2) Where two fireplace openings are built on the opposite sides of a wall; other than a wall separating buildings, any part of the back common to the two openings shall be not less than 4 in. thick.

(3) The back of every other fireplace opening shall not be less than 8½ in. thick.

(4) The thickness required by this by-law shall extend to a height not less than 2 ft. 6 in. above the level of the hearth where the opening is constructed to receive an open fire, and in any other case to a height not less than 12 in. above the fireplace opening.

Damp-proof courses, etc.

107. A chimney which is built against, or forms part of a wall and extends to or below the surface of the ground adjoining the wall, shall be deemed to be part of that wall for the purposes of by-laws 66 and 67 of these By-laws.

Thickness of chimneys.

108. (1) A chimney shall have a minimum thickness of solid material of 4 in. if constructed of bricks, blocks, concrete or stone:

Provided that, where the chimney passes through a roof which is covered with thatch or other combustible material, the thickness shall be increased to not less than 8½ in. for a distance of not less than 4 in. above and below that material.

(2) Where a chimney is in a wall separating buildings and is not back-to-back with another chimney, the material at the back of that part of the chimney which is below the roof shall be not less than 8½ in. thick.

(3) Where the course of a flue makes an angle of less than forty-five degrees with the horizontal, the upper side of that part of the chimney shall, be not less than 8½ in. thick.

Lining of chimneys.

109. Every chimney shall be properly lined, pargeted or otherwise suitably protected.

Rendering of outside of chimneys, etc.

110. Where part of a chimney constructed of bricks, stone or blocks, other than flue blocks having no vertical joints, is less than 8½ in. thick, the surface of that part, if within a building, shall be rendered or otherwise suitably protected.

Timber, etc. in or near chimneys.

111. (1) No timber or other combustible materials shall be placed in a wall or chimney breast within a distance of 9 in. of a flue or fireplace opening or of any opening into a flue or fire place opening:

Provided that a wooden plug may be placed not less than 6 in. from the flue or opening.

(2) No timber or other combustible material, being part of the structure, shall be nearer than 1½ in. to the face of any rendering required by by-law 110 of these By-laws.

112. No metal fastening which is in contact with any combustible material, shall be placed within 2 in. of any fireplace opening or flue.

Metal fastening.

113. The chimneys of every domestic building, every public building and every building of the warehouse class in which persons are intended to be habitually employed in manufacture, trade or business, shall adequately resist the penetration of rain into the building.

Chimneys to be weatherproof

114. (1) Every chimney shall extend to such a height above the adjoining roof, so as to comply with this by-law.

Minimum height of chimneys.

(2) Where a chimney is carried up through the ridge of a roof which has a slope on both sides of the ridge of not less than ten degrees with the horizontal, the top of the chimney, shall be not less than 2 ft. above the ridge, and in any other case the top of the chimney, shall be not less than 3 ft. above the roof, measured from the highest point in the line of junction with the roof.

Width of chimneys.

115. The least width of a chimney or of a group of chimneys bonded together measured horizontally at right angles to its greatest horizontal dimension, shall be not less than one-sixth of the height of the chimney or group of chimneys above the highest point in the line of junction with the roof, unless the chimney or group of chimneys is otherwise made secure.

Flues communicating with habitable rooms.

116. A flue which communicates with a room intended for human habitation shall not communicate with any other room:

Provided that, nothing in this by-law shall prohibit the use of a common flue in connexion with a back-to-back grate.

Fireplaces, etc.

117. No fireplace, firegrate, range or similar apparatus in which solid fuel is to be burned, shall be fitted, whether anew or by way of replacement, in a fireplace opening unless that opening has a hearth which complies with by-law 103 of these By-laws and connects to a chimney or flue.

Floors under stoves, etc.

118. Where a stove, oven, copper or steam boiler or other similar apparatus (not being an apparatus in which the heat is supplied by gas, electricity or oil) is fitted in a building elsewhere than on a hearth constructed in connexion with a fireplace opening in accordance with by-law 103 of these By-laws, the floor under the apparatus and for a distance of not less than 16 in. beyond its front and not less than 6 in. beyond its back and sides shall be constructed of non-combustible material of sufficient thickness or protected by a sufficient slab or plate of non-combustible material:

Provided that, in the case of a free-standing domestic heating or cooking appliance, the distance for which the floor in front of the stove is required to be so constructed or protected shall be not less than 9 in.

Factory Chimney Shafts

Application of
By-laws to
certain chimney
shafts.

Construction of
shafts and blast
furnaces.

119. By-laws 120 to 123 of these By-laws shall apply to chimney shafts which are structurally independent and erected in connexion with a building of the warehouse class.

120. (1) A shaft and its foundations shall be designed and constructed in accordance with British Standard Code of Practice—C.P. 3.

(2) A shaft and its foundations designed and constructed in accordance with the following provisions of this by-law, in the case of a maximum wind velocity of 65 m.p.h., will satisfy the requirements of paragraph (1) of this by-law.

(3) The appropriate limits of stress for the materials of which the shaft is constructed shall not be exceeded when the shaft is subjected to a horizontal wind pressure (as modified by the appropriate shape factor specified in the Table set out below) of—

- (a) 12 lb. per sq. ft. if the height of the shaft does not exceed 40 ft.;
- (b) 14 lb. per sq. ft. if the height of the shaft does not exceed 50 ft.;
- (c) 15 lb. per sq. ft. if the height of the shaft does not exceed 60 ft.;
- (d) 17 lb. per sq. ft. if the height of the shaft does not exceed 80 ft.;
- (e) 18 lb. per sq. ft. if the height of the shaft does not exceed 100 ft.;
- (f) 19 lb. per sq. ft. if the height of the shaft does not exceed 120 ft.;
- (g) 21 lb. per sq. ft. if the height of the shaft does not exceed 140 ft.;
- (h) 22 lb. per sq. ft. if the height of the shaft does not exceed 160 ft.;
- (i) 23 lb. per sq. ft. if the height of the shaft does not exceed 180 ft.;
- (j) 24 lb. per sq. ft. if the height of the shaft exceeds 180 ft.

TABLE

<i>Plan shape of structure</i>	<i>Factor</i>
Circular	0·7
Octagonal	1·0
Square (wind perpendicular to diagonal)	1·0
Square (wind perpendicular to face)	1·3

(4) In the case of shafts exceeding 50 ft. in height, they shall be designed by an approved structural designer as defined in the Eighth Schedule to these By-laws and the shaft shall be capable of safety resisting, a horizontal wind pressure (as modified by the appropriate shape factor specified in the aforesaid Table) of one-and-a-half times that specified for its height in this paragraph.

(5) For the purpose of paragraph (3) of this by-law, the wind pressure shall be assumed to be acting uniformly over the whole height of the shaft; the total lateral force being taken as the product of the wind pressure and the maximum vertical projected area.

(6) The base of the shaft shall rest upon some suitable foundation, so constructed, that when the shaft is subjected to the wind pressure specified for its height and shape by paragraph (3) of this by-law, the pressure on the ground under the foundation does not exceed the safe bearing capacity of the ground.

(7) The height and siting of a factory chimney shaft shall be to the satisfaction of the council.

(8) A blast or similar furnace shall not be sited within 40 feet of a building which is not built entirely of incombustible materials, or without the consent of the adjacent owner or owners within a similar distance of any plot boundary, and it shall be properly baffled at its outlet.

121. (1) A shaft constructed of brickwork, stonework, or block-work, shall be deemed to be designed and constructed in accordance with paragraphs (3) to (6) of by-law 120 of these By-laws, if it complies with the following paragraphs (2) to (11) of this by-law.

Shafts
constructed of
brickwork,
stonework or
blockwork.

(2) The bricks, blocks or stones shall conform with the requirements of by-law 32 of these By-laws and shall be properly bonded and solidly put together with mortar.

(3) Where the horizontal section of the shaft is circular or in the form of a regular polygon, the external diameter or least width at its base shall not be less than one-twelfth of the height of the shaft.

(4) Where the horizontal section of the shaft is rectangular the lesser width at its base shall be not less than one-tenth of the height of the shaft.

(5) The thickness of the brickwork, stonework or blockwork shall be not less than $8\frac{1}{2}$ in. at the top of the shaft and for not more than 20 ft. below the top, and shall be increased by not less than 4 in. for each additional 20 ft. or part of 20 ft. of the height of the shaft measured downwards.

(6) The shaft shall have a batter of not less than $2\frac{1}{2}$ in. in every 10 ft.

(7) Any footings provided at the base of the shaft shall—

(a) project in every direction from the base for not less than two-thirds of the thickness of the brickwork, stonework or blockwork of the shaft at the base;

(b) be in height not less than one and one-third times their projection;

(c) be either in regular off-sets from the base or in one off-set; and

(d) be built solid to the level of the base.

(8) The footings or the base of the shaft shall rest upon a suitable and sufficient foundation.

(9) Where the footings or the base of the shaft rests upon cement concrete, and the bearing capacity of the ground under the concrete is not less than one ton per sq. ft., the requirements of paragraph (8) of this by-law shall be deemed to be satisfied if—

- (a) the projection of the concrete in every direction from the base of the shaft is not less than one-and-a-half times the thickness of the brickwork, stonework or blockwork at the base; or
- (b) the thickness of the concrete is not less than one and one-third times the projection of the concrete beyond the footings, or beyond the base if footings are not provided; or
- (c) the concrete is composed of cement and well-graded aggregate in the proportion of 112 lb. of cement to not more than 12½ cu. ft. of well-graded aggregate.

(10) Where an opening is formed in the side of a shaft, the sides of the opening shall be strengthened to offset any loss of strength due to the formation of the opening.

(11) Shafts exceeding 50 ft. in height, shall be designed by an approved Structural Designer as defined in the Eighth Schedule to these By-laws.

Protection of metal work

122. Any structural steel or metal reinforcement in a shaft, shall be adequately protected against heat and corrosion.

Independent linings.

123. Every shaft shall be provided with—

- (a) a lining of suitable insulating brick, which shall be in addition to, but may be bonded to the structural brickwork; or
- (b) an independent lining of suitable material which shall be—
 - (i) carried up to a sufficient height to protect the shaft from damage by heat; and
 - (ii) separated from the shaft by a cavity not less than one inch wide, which shall be suitably covered at the top by a projection from the shaft, so arranged, as to allow freedom of movement of the lining.

Design and Erection of Certain Buildings

Registered architect and structural designer.

124. Unless the council otherwise agrees, a person proposing to erect a building of a type described in by-law 127 of these By-laws, shall employ for the purpose of the architectural design thereof, a registered architect, and for the purpose of the structural design thereof, a structural designer and shall retain the services of such architect or structural designer for the purpose of supervising the erection of such building.

Certificate as to workmanship.

125. On completion of any work referred to in by-law 127 of these By-laws, the architect or structural designer, as the case may be, shall provide the council, with a certificate certifying that the work has been carried out in accordance with the design, and complies with the Seventh Schedule to these By-laws and any appropriate Code of Practice.

126. Every person who erects or causes the erection of a building of a type described in by-law 127 of these By-laws, shall employ on the site throughout the period of the construction, a resident engineer or clerk of works or general foreman, who is capable of reading the particulars of working drawings showing the details of structural design, and of ensuring that the work is carried out in accordance therewith, and also with the requirements of by-law 32 of these By-laws and the Seventh Schedule of these By-laws.

Inspector.

127. The buildings to which by-laws 124, 125 and 126 of these By-laws apply are—

Application of
by-laws 124, 125
and 126 to
buildings.

- (a) any domestic, warehouse class or public buildings of four or more storeys or in which provision is made for future development of such number of storeys;
- (b) any warehouse class or public building having no floor other than the ground floor and in which the height from the ground to the eaves or to the underside of the roof slabs exceeds 20 ft. and the roof span exceeds 30 ft.;
- (c) any warehouse class or public building in which any suspended structural floor panel exceeds 20 ft. in span; and
- (d) any public building in which a balcony is provided for the purposes of public assembly.

128. Steel and concrete shall be tested as the work proceeds to establish consistency and strength. If required, details shall be submitted to the council.

Steel and
concrete to
be tested.

129. (1) All drawings in respect of the structural frame of steel-framed buildings or reinforced concrete buildings, and calculations connected therewith, when the submission of these is required, shall be signed by the designer, who shall be a person whose qualifications are to the satisfaction of the council.

Design and
calculations.

(2) The requirements as to qualifications for the design of reinforced concrete, which will normally satisfy the council, are specified in the Eighth Schedule to these By-laws.

(3) With the drawings referred to in paragraph (1) of this by-law, a certificate shall be issued by the designer, certifying that the drawings and calculations are in accordance with the requirements of by-law 47 or by-law 48 of these By-laws, as the case may be.

(4) A certificate issued pursuant to paragraph (3) to these By-laws will generally be accepted by the council in lieu of the submission of calculations, but the council, may require that certified calculations, in addition to the certificate, be submitted.

(5) The drawings referred to in paragraph (1) of this by-law, shall show clearly in each drawing every separate unit of construction, and by figured dimensions the size and shape of the unit, and the size, number and position of structural members, and where necessary the method of making and the positioning of constructional joints. The drawings shall be to a scale not less than $\frac{1}{4}$ in. to 1 ft., and each drawing shall be comprehensive in itself so as to require reference which is excessive in the opinion of the council.

(6) Structural drawings may be submitted after approval of the plan to which they refer, but no work shall commence until the drawings in respect thereof are approved.

(7) Normally structural designs shall be comprehensive but in major projects, detailed submissions of intended development, in stages related to the building programme, complete in each stage, will be acceptable to the council.

Structural
designers.

130. The council may accept designs and calculations for reinforced concrete from any person whose name is not included in the register referred to in the Eighth Schedule to these By-laws, provided that the work is limited in the design to stresses per sq. inch not exceeding 750 lb. for bending, 600 lb. direct, 75 lb. shear and 100 lb. bond, at a modular ratio of 15. In the case of structural steel design the council may accept designs from any person whose name is not included in the register as aforesaid, if the design is in accordance with the elastic theory, the requirements of C.P. 449 and to the use of steel to B.S. 15.

High stress
reinforced
concrete—
supervision.

131. Reinforced concrete designs for strengths in excess of those laid down in by-law 130 of these By-laws, shall not be approved by the council, unless it is satisfied that a supervisor qualified in the opinion of the council will be retained for supervision of all reinforced concrete work.

Welding.

132. The use of welding in the fabrication of steel work shall only be permitted with the express consent of the council and only if allowed for in the design.

Stairs

Dimensions.

133. (1) For the purpose of these By-laws, stairs shall be measured as follows—

- (a) risers shall be measured vertically from top of tread to top of tread;
- (b) treads shall be measured horizontally from face of riser to face of riser;
- (c) width shall be measured between the faces of strings or between strings and balusters or walls, as the case may be; and
- (d) headroom shall be measured vertically above the raking line of nosings.

(2) Stairs shall be constructed to have a constant and uniform rise and tread and, shall be to the following minimum and maximum dimensions—

- (a) dwellings:
 - (i) minimum width—2 ft. 6 in.;
 - (ii) maximum rise of steps—7½ in.;
 - (iii) minimum tread of steps—9 in.;
 - (iv) minimum headroom—6 ft. 9 in.;
- (b) warehouse class and domestic buildings (other than provided for in paragraph (2) (a) of this by-law)—
 - (i) minimum width—3 ft. 9 in.;
 - (ii) maximum rise of steps—6½ in.;
 - (iii) minimum tread of steps—10 in.;
 - (iv) minimum headroom—7 ft.;

(c) in domestic buildings and buildings of the warehouse class where less than 10 persons are employed on the floor or floors served by the staircase the dimensions of the staircase shall be not less than those in paragraph (2) (a) of this by-law.

(3) In public buildings as grouped in the Sixth Schedule to these By-laws stairs shall be constructed in accordance with the provisions of that Schedule. If stairs are not covered within any group they shall be constructed to comply with the minimum standard required for a building of the warehouse class.

(4) (a) No flight of stairs shall exceed sixteen steps and intervening landings between flights shall have a minimum length of 2 ft. 3 in., except for stairs referred to in paragraphs (2) (b) and (3) of this by-law when the landing shall extend for a length of not less than 4 ft.;

(b) stairs shall be so constructed in such a manner that in no case, except as provided for in paragraph 3 of this by-law, is there more than two successive flights without a turn;

(c) except in small houses; where a maximum of three flights shall be permitted in a width of flight right angle turn:

Provided that winders or similar steps shall not be permitted without the consent of the council.

(5) (a) Secondary and fire escape stairs, shall be of an approved width and design, but in no case of less dimensions than those prescribed in paragraph (2) (a) of this by-law;

(b) in special circumstances, the council, may permit, the use of an approved type of escape leader or other equipment in substitution for an escape staircase.

134. (1) Unless, the council otherwise agrees, a handrail, shall be provided at each stair. In the case of stairs of a type referred to in paragraph (2) (b) of by-law 133 of these By-laws, a handrail, on each side, shall be provided and the outer handrail shall be as continuous as is practicable throughout the stairway and all ends of handrails shall be finished off in an approved manner.

Handrails.

(2) Handrails, shall not encroach more than 3 in. into the minimum width of the staircase.

(3) Vertical balusters on stairs and balconies shall not be spaced more than 5 in. apart.

(4) Where other forms of railings or protection are used on stairs or balconies, the infilling below the handrail, shall adequately provide for the safety of the persons using the stairs or balconies.

(5) No protective balustrade shall be less than 2 ft. 9 in. in vertical height above the nosings at the rake of the stair, nor less than 3 ft. in height at landings.

(6) In public buildings, as grouped in the Sixth Schedule to these By-laws, handrails, shall be either in accordance with the provisions of that Schedule or with this by-law.

135. Unless the council agrees, where a staircase exceeds 7 ft. 6 in. in width, a central handrail shall be provided.

Central
handrails.

General.

136. Construction of stairs shall conform with B.S.S. 585 and shall satisfy the requirements of by-law 32 of these By-laws.

Lifts

See Appendix I to these By-laws for relevant provisions of the Factories Act.

Cap. 514.
Enclosure and
position of lifts.

137. (1) The enclosure and position of lifts in new buildings, shall comply with the following requirements of this by-law.

(2) The motor chamber shall be impervious to moisture and fully enclosed with incombustible materials and separated from the lift shaft, except, for openings necessary for the passage of the requisite wires and cables.

(3) In enclosed lift shafts, a smoke outlet to the open air, shall be provided, at or near the head of the shaft. The smoke outlet shall be not less than 2 sq. ft. in area and fitted with an openwork metal grille or widely spaced louvres.

(4) The motor chamber, shall be cross-ventilated, and, shall be provided with an approved window space, which shall open directly into the external air. The chamber shall be of sufficient size to permit an unobstructed circulating passage between the lift motor equipment and the external walls.

(5) In domestic and public buildings, where any floor is more than 42 feet above the adjacent ground level, and there is only one staircase enclosure, the lift shaft shall be wholly enclosed in fire-resisting materials having a notional fire resistance equal to that of the walls of the building in which the lift is installed and not of less thickness than 3 in., and doors to opening shall be of solid wood type doors or steel shielded gates with a resistance to fire of not less than half of that required for the walls enclosing the lift shaft.

(6) In buildings not exceeding 42 ft. in height, if the motor chamber is situate at the bottom of the shaft, the lift shaft may be within the staircase enclosure if protected by solid fire-resisting enclosures and solid wood type doors or steel shielded gates. If the motor chamber is situate at the head of the shaft, the enclosure to the lift, may consist of metal grilles with collapsible lattice gates at openings.

Certificate of
efficiency.

138. (1) Lifts and hoists shall comply with the following requirements of this by-law.

(2) An electric passenger lift shall be maintained and inspected at least once every six months by a competent lift engineer, and a certificate by such engineer to the effect that the whole installation is in safe working order, shall be submitted to the council by the owner of the premises at least once in every twelve months.

(3) A certificate issued in the manner described in paragraph (2) to this by-law relating to any lift or hoist other than an electric passenger lift, shall be submitted to the council when required.

(4) Before a lift or hoist is put into use a certificate as required in paragraph (2) or paragraph (3) of this by-law, as the case may be, shall be submitted to the council.

Refuse Disposal

139. (1) Every domestic and public building and building of the warehouse class shall be provided with approved means of refuse disposal. If a refuse collection service is available, the following requirements of this by-law or by-law 140 of these By-laws shall apply.

Disposal.

(2) Within the curtilage of each premises a container plinth of permanent construction with adequate falls shall be provided of not less height than 3 in. above the surrounding ground level and in area not less than 6 sq. ft. for each container.

(3) The container plinth required to be provided in accordance with paragraph (2) of this by-law shall be so sited that—

- (a) the amenity of any premises or highway is not impaired; and
- (b) it is readily accessible for removal of the container.

140. (1) Unless alternative means of refuse disposal satisfactory to the council are provided, refuse chutes shall be installed in—

Refuse chutes.

- (a) a block of dwellings exceeding three storeys in height; and
- (b) any other building where an upper floor which requires refuse disposal service is 20 ft. above the adjoining ground level.

(2) Refuse chutes may be required by the council in any case, if in its opinion, other means of refuse disposal are impracticable.

(3) Every refuse chute shall be fitted with an approved container, and shall be sited outside the area of the habitable accommodation in a position which creates the minimum nuisance to the occupiers, and in a manner which affords the ground floor occupier suitable access for refuse disposal through the chute to the container.

(4) The refuse chute shall be designed to ensure that the contents deposited therein discharge entirely within the refuse container.

(5) If a refuse chute is provided, unless the council otherwise agrees, the refuse disposal of the entire premises must be by such a refuse chute.

141. A refuse chute shall comply with the following requirements of this by-law—

Construction
of refuse
chutes.

- (a) it shall be constructed throughout of fire-resisting material having a notional fire resistance period of not less than one hour;
- (b) it shall have access from each room; or point of disposal, through a self-closing dustproof door, designed when opened to contain the refuse deposited, and on closing to discharge it into the refuse chute without allowing refuse fallout;
- (c) the internal surface of the chute shall be glazed or be of other approved finish, and shall be of a diameter not less than 12 in. and shall be constructed to assist the passage of the refuse into the container without causing undue obstruction or contamination;

- Completion
of means of
refuse disposal.
- (d) the container room connected to a refuse chute shall have a solid concrete base with a hard smooth finish, and the walls thereof shall be rendered not less than half an inch in thickness to a smooth finish; the junction of the wall with the floor shall be coved. The floor, where practicable, shall be 3 in. above the surrounding area. Access to the container shall be designed in a manner facilitating the use of equipment for the removal of the container;
 - (e) it shall be designed to prevent the penetration of rain or surface water. The door shall be constructed of fire-resisting material and shall be positioned so that when opened the contents of the refuse chute during removal will cause the minimum nuisance;
 - (f) it shall be properly ventilated as near to the top as practicable, and any opening shall not permit the discharge of dust or foul air into any room of a building.

142. (1) Before a certificate of completion is issued in respect of any building, by the council, the means of refuse disposal shall be completed, and the receptacles or containers provided.

(2) If partial occupation of premises is allowed by the council, means of refuse disposal shall be provided for the portion so occupied.

Water Supply

Water supply.

143. (1) The plans of a building shall show that an approved supply of wholesome water, sufficient for the purposes to which the building is to be put will be provided, and the supply so provided shall be connected to the fittings and ready for use before a certificate of completion will be issued by the council.

(2) The water supply installation whether taken from the council's water reticulation system or otherwise, shall comply with British Standard Code of Practice C.P. 310 and, except where otherwise specified in this by-law, the pipes, brassware, fittings, valves, cisterns, tanks and any other material used in any installation of a water supply system shall be deemed to be part thereof and shall be of no less quality than that specified in the appropriate British Standard Specification or, if, no such specification is applicable, that specified by the council from time to time.

(3) All water supply installations, except approved fittings contained in a low pressure system, shall be capable of sustaining a working pressure of 300 lb. per sq. inch.

(4) Unless the council otherwise agrees, every building, shall be provided with a stored supply of cold water for domestic purposes taken from the main water supply of the building.

(5) The requirements of paragraph (4) of this by-law shall be satisfied if—

- (a) for each dwelling there is a stored supply of water of not less than 100 gallons, and in any other premises the stored supply of water is sufficient to meet a twenty-four hours demand from the occupier of the building;
- (b) for a storage system for quantities of less than 200 gallons, a Grade "A" (B.S. 417) type cistern is used, and for quantities of 200 gallons or more a Grade "B" (B.S. 417) type is used;

(c) all cisterns are adequately supported, mosquito-proofed to the satisfaction of the council, and the water stored therein protected against contamination;

(d) cold water taps from which water for human consumption may be drawn are connected direct to the rising main:

Provided that the requirement of this subparagraph shall not apply to cases where the council has given written permission subject to such conditions as it deems necessary;

(e) in all buildings sufficient fittings for the supply of drinking water are readily accessible to occupants.

144. (1) Every supply pipe leading from the council's water mains to premises shall be provided with an approved stop-tap, within and as near as practicable to the boundary of the plot within which the premises are situate.

Stop-taps.

(2) If a supply pipe leading from the council's water mains, supplies water to more than one dwelling or other premises, there shall be provided an additional stop-tap within each dwelling or other such premises as near as practicable to the point of entry of the supply pipe.

(3) Every stop-tap shall be placed in an easily accessible position and if underground or in an exposed situation, shall be enclosed in an approved box with a suitable cover or be otherwise adequately protected to the satisfaction of the council.

(4) An approved stop-tap shall be provided on every outlet pipe of a storage cistern as near to the cistern as practicable.

(5) Every person who shall lay or use any supply pipe in accordance with paragraph (1) of this by-law, shall permit the council to fit an additional stop-tap to which the council shall have sole access.

145. Every cold storage cistern or tank shall be provided with an overflow pipe which shall be at least $\frac{1}{4}$ in. greater in diameter than the supply pipe and which shall discharge water in a conspicuous place in the event of an overflow occurring.

Overflow pipes

146. Unless the council otherwise agrees, every screwed pipe joint or screwed fitting used in connexion with a water supply, shall be readily accessible for inspection and repair and no screwed joint of any pressure pipe shall be within a wall, unless a duct is provided which will permit inspection and repair of that joint.

Pipe joints.

147. The provisions of by-law 210 of these By-laws shall apply to all work carried out in connexion with the installation of a water supply.

Plumbing.

148. Where required by the council, an approved supply of stored water shall be provided and maintained for fire-fighting purposes.

Supply of water for fire fighting.

149. All fittings not to a British Standard which form part of a water supply installation shall be approved by the council.

Fittings.

Ventilation of Buildings

Windows.

150. Every domestic building shall be provided with approved means of ventilation and shall have a sufficient number of windows suitably positioned for direct communication with the external air.

Area of windows.

151. (1) Every habitable room shall have a window or windows opening directly into the external air, which shall have for the purpose of daylight, a total area exclusive of frames, equal to at least one-tenth of the floor area of such room.

(2) For a window in a wall abutting on to an open verandah or immediately beneath a balcony or canopy, the minimum area as required by paragraph (1) of this by-law shall be increased by 5 per cent for each foot that the verandah, balcony or canopy projects from the wall.

(3) In habitable rooms windows shall be constructed so that an area thereof equal to at least one-twentieth of the floor area of the room shall be made to open to the external air, and part of the area so required to open shall not be less than 5 ft. 9 in. above the floor:

Provided that a window which opens from a habitable room on to an enclosed verandah, conservatory or similar place, shall be deemed to open directly into the external air if that room and that place are together provided with windows which open directly into the external air, and would suffice for the purposes of this paragraph if they were the windows of a room having a floor area equivalent to the combined floor area of the first mentioned room and that place.

Space opposite windows.

152. (1) A window of a habitable room shall not be deemed to have direct communication with the external air unless there is opposite to such window for its entire area an unobstructed open space distant from—

- (a) the plot boundary facing such window; or
- (b) if such a boundary abuts on to a street or on to land designated as a public open space, the plot boundary on the opposite side of such street or land; or
- (c) if the window faces an internal open space contained entirely on the same plot as the building in which the window is situate, the wall on the opposite side of such open space,

by an amount whereby the vertical face of the wall in which the window is placed does not intersect the theoretical plane created by an angle of 68 degrees from the horizontal and projected towards the wall from the aforementioned boundary or opposite wall at a height of 5 ft. above the level of the floor of the room which the window serves:

Provided that—

- (i) if adjoining plots are developed in such a manner as to allow for an internal open space, part of which is situate on each plot, the said theoretical plane may, if the council so agrees, be projected from the wall on the opposite side of that open space; and
- (ii) in no case, shall the distance across an open space opposite a window of a habitable room be less than 8 ft.

(2) No balcony or other projection from the face of a wall containing the window of a habitable room shall be so constructed that it intersects the theoretical plane described in paragraph (1) of this by-law.

153. No person shall erect a back-to-back dwelling.

Back-to-back dwellings.

154. (1) A dwelling shall be deemed to be back-to-back dwelling if—

Definition back-to-back dwellings.

- (a) it has only one external wall containing door and/or window openings;
- (b) at least two parallel external walls do not contain door and/or window openings;
- (c) approved through-ventilation cannot be obtained in every habitable room.

(2) For the purpose of this by-law through-ventilation to rooms may be obtained by communication with one external wall by way of a lobby or passage, which is itself adequately ventilated to the external air.

155. (1) If required by the council, every person who, erects a building, shall cause every habitable room to have approved permanent air vents of sufficient number, so arranged as to ensure cross or through ventilation to the external air.

Ventilation-habitable rooms.

(2) Air vents shall be placed at a height above the floor of not less than two-thirds of the average height of the room.

(3) For the purpose of this by-law, communication with the external air may be obtained through a ventilated corridor or passage which itself has an external wall through which adequate ventilation to the external air is provided, or the council may accept a flue communicating the room directly to the external air as one part of the means of providing through-ventilation:

Provided that, in all cases permanent ventilation shall be provided in one external wall.

156. (1) Every dwelling of two or more habitable rooms, shall be provided with a kitchen of not less area than 60 sq. ft., the minimum horizontal dimension of which shall be 6 ft.

Kitchens.

(2) Every kitchen shall have a floor to ceiling height of at least 8 ft.

(3) Every kitchen shall be provided with a suitable sink and satisfactory means for the cooking of food.

(4) Every kitchen shall be provided with approved light and ventilation.

(5) In a dwelling consisting of one habitable room only, there shall be provided a properly defined cooking place of not less than 35 sq. ft. in area having the minimum dimensions of 4 ft. in depth and 7 ft. in height.

(6) The area to be provided under paragraph (5) of this by-law shall be lighted and ventilated to the satisfaction of the council, and shall comply with paragraph (3) of this by-law as if it were a kitchen.

Larders—
ventilation.

157. (1) Every dwelling with a kitchen shall be provided with a pantry or larder of a capacity of not less than 40 cu. ft. for the storage of food.

(2) Every pantry or larder shall be ventilated to the external air by an opening fitted with a fly-proof cover, so constructed as to allow an adequate flow of air.

Staircases—
ventilation and
lighting.

158. All common stairs and common passages shall be adequately cross ventilated, and for common stairs sufficient natural and artificial lighting shall be provided.

Size and
height of
rooms.

159. (1) Every habitable room shall be of an average height of at least 8 ft. taken over the entire area of the room:

Provided that—

(i) if the room is a room, wholly or partly, in the roof of the building, it shall be 8 ft. at least in height over not less than 75 sq. ft. or one-half of the area of the room measured at a height of 5 ft. above the floor level of the room, whichever is the greater area; and

(ii) the height shall be increased from 8 ft. to 9 ft. at altitudes of less than 4,000 ft. above sea level.

(2) The height of a habitable room shall be measured from the finished floor to the finished ceiling or if there is no ceiling to one inch below the underside of the upper floor joists or, if there is no upper floor, as specified in paragraph (1) of this by-law.

(3) Unless, the council otherwise agrees, ceilings shall be provided in all habitable rooms.

(4) Every habitable room shall have a superficial floor area of not less than 75 sq. ft.:

Provided that—

(i) in every dwelling there shall be constructed one habitable room having a superficial floor area of 150 sq. ft. at least;

(ii) no habitable room shall have a cross dimension of less than 7 ft.; and

(iii) no alcove or bay window or other recess shall have an opening width of less than 5 ft., a ceiling height less than 7 ft., and any such area exceeding 25 per cent of the habitable space of the room, shall not be included in the calculation of superficial floor area.

Height of
bathrooms.
W.C.s and
stores.

160. The height of ceilings measured in accordance with by-law 159 of these By-laws, for bathrooms, water closets, ablution blocks and stores, shall be 7 ft. in domestic buildings and 8 ft. in all other buildings.

Ventilation of
shops.

161. Where the light and ventilation of a shop into the external air required by by-law 150 of these By-laws, is restricted to one wall, the width of such shop shall not, unless the council otherwise agrees, be less than half the depth and approved through-ventilation provided.

167. No door, gate, bar, window or any other hinged or movable part of a building within a minimum height of 9 ft. 6 in. above the adjacent ground level, shall open outwards so as to project into any street, or public open space or common access.	Doors and windows not to open outwards.
163. (1) There shall be no communication between a habitable room and a garage except through a passage, ventilated to the satisfaction of the council.	Garages connected to a dwelling.
(2) A garage connected to a habitable room through a passage, shall be provided with permanent through-ventilation by means of vents at a height of 18 in. above the floor level of the garage.	
164. Every part of a building of the warehouse class, used for human occupation, shall be provided with lighting and ventilation to a standard not less than that required for a habitable room.	Buildings of the warehouse class; ventilation and lighting.
165. (1) Nothing in these By-laws in respect of lighting and ventilation, shall exclude the provision of approved artificial lighting and mechanical ventilation.	Artificial lighting and mechanical ventilation.
(2) If an approved mechanical ventilation and artificial lighting system is installed, the council may relax the requirements of these By-laws relating to the height of rooms and the requirement as to windows.	
166. Except, as otherwise provided for in the Sixth Schedule to these By-laws, every public building shall be provided with adequate means of lighting and ventilation to a standard not less than that prescribed for a domestic building.	Public buildings—lighting and ventilation.

Drainage

167. For the purpose of by-laws 168 to 210 of these By-laws—“slop-sink” means a sink intended for receiving solid or liquid filth;	Definitions.
“soil pipe” means a soil pipe from a water-closet or a waste pipe from a slop-sink or urinal;	
“waste pipe” means a pipe which receives the waste from appliances such as baths, sink (not being slop-sinks), bidets or lavatory basins;	
“waste stack” means a waste pipe which receives the waste from two or more appliances such as baths, sinks (not being slop-sinks), bidets or lavatory basins fixed in more than one storey of a building; and	
“common waste pipe” means a waste pipe to which more than one appliance is connected in any one storey.	
168. Unless, the council otherwise agrees, plans of every building must show satisfactory provision for the drainage of the building.	Drainage.
169. The lowest or the only storey of a building (other than so much of a storey as comprises a cellar or other chamber below ground level intended for storage only, and constructed so as to be impervious to water) shall be at such level or so constructed as to allow the construction of a drain or drains sufficient for the effectual drainage of that storey.	Level of lowest storey.

Drainage of roofs.

170. (1) The roof of a building shall be so constructed, or so provided with appliances for drainage, as to prevent rain which may fall upon it, from causing dampness in any part of the building or damage to the foundations.

(2) No building shall be so designed that rain water will be discharged over or upon a street.

(3) Rain water pipes at a height of less than 9 ft. 6 in. above pavement level, shall not project beyond the building line.

Surface water.

171. (1) No person shall cause or permit any subsoil, surface, storm or rain water or any drain for the conveyance of such waters to discharge into or communicate with any sewer for the conveyance of sewage or waste water except, with the written permission of the council, and then only, on the condition that such subsoil, surface, storm or rain water drain shall discharge directly into the open air or into a trapped gulley the level of the water in such sewer, or be otherwise disconnected therefrom.

(2) No person, shall cause or permit any sewage or waste water drain to discharge into or communicate with any drain for the conveyance of subsoil, surface, storm or rain water.

(3) If the council so requires, surface water from a plot shall be disposed of in an approved manner. The council may require the provision of paved areas laid to falls to gulleys or channels connected to the approved point of disposal.

Combined drains.

172. If it appears to the council, that two or more buildings may be drained advantageously in combination and a sewer of sufficient size already exists or is about to be constructed within seventy yards of any part of such buildings, the council may, when the drains of such buildings are first laid, order that such buildings be drained by a combined system of drainage to be constructed either by the council, or by the owners of the buildings, in such manner as the council may direct, and the costs and expenses of the construction of such combined system of drainage and of the repair and maintenance thereof, shall be apportioned between the owners of such buildings in such manner as the council may determine, and, if paid by the council be recovered by it from such owners as a civil debt.

Drains in streets.

173. A person who carries out drainage works in a street, shall not disturb the surface thereof without the previous consent in writing of the council and subject to such conditions as it may prescribe, and shall only make any sewer connexion at a position approved by the council.

Materials and construction of drains and private sewers.

174. (1) Every drain other than a subsoil drain or a drain to which by-law 170 of these By-laws applies, shall comply with the following provisions of this by-law.

(2) The drain shall be constructed of approved materials.

(3) Where the soil would cause undue corrosion of cast iron, asbestos or concrete pipes, such pipes shall not be used unless protected in an approved manner.

(4) The drain shall be properly supported and protected against injury, provided with watertight joints and laid on to falls as may be required by the council.

(5) The drain when constructed, shall withstand a reasonable hydraulic, smoke or air test under pressure, or other approved test.

(6) The drain shall be of an approved size and shall in no case have an internal diameter less than 4 in.

(7) Where any drain is laid under a building, it shall—

(a) be laid in a straight line or, if this is impracticable, in a series of straight lines;—

(b) unless, it is constructed of cast iron or material of not less strength which complies with the requirements of B.S.S. 416 (heavy grade), be laid in the ground or supported throughout its length, and be completely surrounded with concrete not less than 6 in. thick; and

(c) be provided with adequate means of access for inspection and rodding of its whole length. Such means of access, shall be provided with a bolted airtight cover if within the building.

175. Every inlet to a drain other than a soil pipe, ventilating pipe, or waste stack used as a ventilating pipe, shall be properly trapped.

Inlets to drains to be trapped.

176. Where a drain, combined drain or sewer passes through or immediately under a wall, suitable support for the wall shall be provided so as to prevent the wall from damaging the pipe.

Drains and sewers passing through or under walls.

177. A connexion between a branch drain and any other drain, and a drain and a sewer, shall be so made that the tributary drain joins the other drain or sewer obliquely in the direction of flow of that other drain or sewer, and in manholes shall join it at the invert level or a level not higher than the radius of the main drain or sewer above that level.

Branch drains.

178. (1) Manholes shall, if required by the council, be so positioned as to enable every length of drain to be accessible for rodding.

Manholes.

(2) Unless, the council otherwise agrees, a manhole shall be provided at a point within the curtilage of the building which is drained, and as near as practicable to the point of entry of the drain to the sewer.

179. (1) Every manhole shall comply with the following internal dimensions—

Construction.

<i>Depth</i>	<i>Size</i>
Not exceeding 2 ft. 6 in.	2 ft. 0 in. x 1 ft. 6 in.
2 ft. 6 in — 4 ft. 6 in.	2 ft. 6 in. x 2 ft. 0 in.
Exceeding 4 ft. 6 in.	3 ft. 9 in. x 2 ft. 6 in.

Not exceeding 2 ft. 6 in.	2 ft. 0 in. x 1 ft. 6 in.
2 ft. 6 in — 4 ft. 6 in.	2 ft. 6 in. x 2 ft. 0 in.
Exceeding 4 ft. 6 in.	3 ft. 9 in. x 2 ft. 6 in.

or circular with a diameter of not less than 3 ft.

(2) Every manhole shall be constructed of approved materials and in an approved manner. It shall be watertight, and if constructed of brickwork, solid blockwork or stonework, it shall be rendered with cement plaster of at least $\frac{1}{2}$ in. in thickness and finished with a smooth surface and the walls shall not be less than 6 in. in thickness down to a depth of 6 ft. and at a greater depth the wall thickness shall not be less than 9 inches.

(3) The sides of the channels in every manhole, shall be brought up vertically to a height not less than the diameter of the drains, and shall be benched in good concrete, and such benching, shall be sloped off from the top of the channels at an angle of thirty degrees from the horizontal, and finished with a smooth cement.

(4) A manhole which is more than 5 ft. in depth, shall be provided with a sufficient number of step irons.

(5) Every manhole, shall be fitted with a moveable airtight cast iron manhole cover of adequate size and strength, and fixed in a manner which prevents surface water gaining access into the drainage system.

(6) In all other respects, an installation of drainage, constructed in accordance with the appropriate British Standard Code of Practice, and with materials which comply with the appropriate British Standard Specifications, shall satisfy the requirements of by-law 32 of these By-laws.

Ventilating pipes.

180. (1) A drain for conveying foul water from a building, shall be properly ventilated with at least one ventilating pipe not less than 3 in. in diameter, situate as near as practicable to the building and as far as practicable from the point at which the drain empties into the sewer or other means of disposal.

(2) A ventilating pipe shall be provided at the upper extremity of every branch drain which exceeds 40 ft. in length.

(3) Nothing in these By-laws, shall be deemed to prevent a soil pipe, or waste stack of approved dimensions connected directly to a drain, from serving as a ventilating pipe to the drain.

Soil pipes and ventilating pipes.

181. Every ventilating pipe to a drain, and every soil pipe shall comply with the following requirements of this by-law—

(a) the pipe shall be of approved material;

(b) if the pipe is of cast iron, the thickness of metal in the pipe and fittings shall be not less than—

(i) 3/16th of an inch, if the diameter of the pipe is not more than 4 in.; and

(ii) a $\frac{1}{4}$ of an inch if the diameter of the pipe is more than 4 in.;

(c) the pipe shall—

(i) be carried upwards to such a height and position as effectually to prevent the escape of foul air from such pipe into any building; and

(ii) be fitted at its open end with a wire cage or other suitable cover made of durable material admitting the free passage of air.

(d) the pipe, shall be capable of withstanding after erection, a reasonable hydraulic smoke, or air test under pressure;

(e) the pipe, shall not have a trap at its point of junction with the drain, or elsewhere, except, where necessary as part of the apparatus of any water-closet or slop-sink;

(f) the pipe shall not have any bend, except, where unavoidable in which case the bend shall—

(i) have an obtuse angle as large as possible;

- (ii) have the largest practicable radius of curvature; and
- (iii) not change in any way the cross section of the pipe.
- (g) unless, the council otherwise agrees, no joints in soil pipes shall be permitted within the thickness of walls or floors;
- (h) any soil or vent pipe, which is constructed within a building, shall be of cast iron or other approved material and provided with flanged joints or other approved airtight joints, and shall be fixed inside a duct fitted with access panels or otherwise encased or supported in an approved manner;
- (i) the internal diameter of a soil pipe (including any part of such pipe carried up as a ventilating pipe) shall be not less than that of any pipe discharging into it, and, unless it is a waste pipe from urinals only, the internal diameter shall in no case be less than 3 in.; and
- (j) the bend at the foot of every soil pipe, shall rest in a solid bend of concrete.

182. (1) Except, when a branch drain connects a soil pipe with the main drain at a manhole, an access plate shall be provided at the foot of the soil pipe.

Access.

(2) Bolted access plates shall be provided at every junction between a branch pipe and a soil pipe and between soil pipes.

183. (1) Every waste pipe from a bath, sink (not being a slop-sink), bidet, or lavatory basin and every other pipe for carrying off waste water, shall comply with the following requirements of this by-law:

Waste pipes.

Provided that a waste pipe used as a ventilating pipe to a drain and any waste pipe which is a waste stack shall comply with paragraphs (b) and (d) of by-law 181 of these By-laws and with paragraph (3) of this by-law.

(2) The pipe, shall have an internal diameter adequate for the function it has to perform, and not less than that of any pipe connecting it with the appliance it serves. It shall also have means of access for cleansing. In no case shall the waste pipe be less than $1\frac{1}{2}$ inches in diameter, and where it has a common waste pipe, it shall have a minimum diameter of 2 in.:

Provided that the waste pipe receiving the discharge from not more than two lavatory basins, may be of an internal diameter of $1\frac{1}{2}$ inches.

(3) The pipe, shall if it is more than 6 ft. in length, be provided with a suitable trap. Every such trap shall be fixed in such a manner as to be easily accessible for cleaning.

(4) Nothing in paragraph (3) of this by-law, shall be deemed to prevent two or more lavatory basins fixed in a range from discharging into a common waste pipe, provided that the common waste pipe (whatever its length) itself discharges through a trap and has adequate means of access for cleansing.

(5) If a waste pipe discharges into a soil pipe, ventilating pipe to a drain, or waste stack—

- (a) the quality of the pipes and the joints shall be in accordance with by-law 181 of these By-laws;

- (b) the waste pipe shall be provided with an approved deep seal or anti-vac trap at each outlet from the appliance;
- (c) the diameter of the waste pipe shall be greater than that of the trap leading into it; and
- (d) the waste pipe shall be capable of withstanding the requirements of by-law 181 of these By-laws.

(6) Any trap connected to a common waste pipe shall be protected from siphonage.

(7) A waste pipe, if it discharges to a drain otherwise than as specified in paragraph (5) above of this by-law, shall discharge into the open air, and be disconnected from the drain by a trapped gulley fitted with a suitable grating, and the waste pipe, shall discharge above the level of the water in the trap and in such a way as not to cause dampness in a wall or foundation of any building:

Provided that, with the approval of the council, waste water may be received into a trapped gulley inside a building.

Maintenance
of water seal
in traps.

184. Such provision shall be made in the lay-out of drains and soil pipes, waste pipes and ventilating pipes, as may be necessary to prevent under working conditions, the destruction of the water seal of any drain trap or trap of a soil or waste appliance.

Sanitary Conveniences

Water-closets.

185. (1) A water-closet constructed in connexion with a building, shall comply with the following provisions of this by-law.

(2) The pan, basin or other receptacle forming part of such water-closet (hereinafter in these By-laws called "the pan") shall be made of a smooth and readily cleansed non-absorbent material, and of such shape, capacity and mode of construction, as to receive and contain sufficient quantity of water, and to allow all faecal matters to fall free of the sides thereof directly into the water received and contained in such pan.

(3) The flushing apparatus, shall be capable of securing the prompt and effective cleansing of the pan. The minimum capacity of a low level cistern shall be three gallons and that of a high level cistern, two gallons.

(4) No part of the pan, shall be directly connected with any pipe, other than a soil pipe, drain or flush pipe, leading from the flushing apparatus.

Urinals.

186. (1) A urinal constructed in connexion with a building, shall comply with the requirements of paragraphs (2) and (5) of this by-law, and where a supply of water is laid on to the building, it shall also comply with the requirements of paragraphs (3) and (4) of this by-law.

(2) The urinal shall be provided with a slab stall, trough or other suitable receptacle or receptacles, which shall—

- (a) have a smooth and readily cleansed non-absorbent surface;
- (b) be provided with an outlet which, shall be fitted with an approved grating and trap; and

(c) be so constructed as to facilitate cleansing.

(3) The urinal, shall be provided with an apparatus capable of effectually flushing and cleansing the receptacles from a supply of clean water.

(4) No part of any basin or other receptacle, forming part of a urinal, shall be directly connected with any pipe other than a soil pipe, drain, or flush pipe leading from the flushing apparatus.

(5) The floor of a urinal, shall be impervious to moisture, and finished with a hard wearing surface which can be easily cleansed and satisfactorily drained to a point within the compartment.

187. (1) No person, shall construct a trough closet, except, with the written permission of the council. Trough closets.

(2) A room containing a trough closet shall be so constructed as to open directly to the external air.

(3) An automatic water flushing system of not less than a five-gallon flush shall be provided to a trough closet.

188. (1) Every water closet shall be fitted so as to comply with the requirements of either paragraph (2) or (3) of this by-law. Fixings and floor water closets.

(2) The requirements referred to in paragraph (1) of this by-law shall be that—

- (a) the whole of the pan, shall be fixed above the level of the floor and shall be adequately secured thereto;
- (b) the pan shall be provided with a seat of an approved type;
- (c) unless, the council otherwise agrees; the sides of the pan shall not be enclosed;
- (d) if required by the council, the floor of the water closet shall be finished with a smooth and readily cleansed hard wearing surface.

(3) The requirements referred to in paragraph (1) of this by-law shall be that—

- (a) the pan shall be sunk so that the upper edge of the flushing rim is below the level of the floor. The joint between the flushing rim and the floor finish shall be made in an approved manner;
- (b) the pan shall be encased in cement concrete at least 4 in. in thickness;
- (c) the floor of the water closet, shall be constructed of cement concrete at least 4 in. in thickness, be impervious to moisture, finished with a hard wearing readily cleansed surface and laid to fall so that any liquid will flow into the pan of the water closet;
- (d) a smooth and readily cleansed coved skirting shall be formed at the junction of the floor and wall.

189. (1) Every dwelling shall be provided with a bathroom of not less than 25 sq. ft. in area having a minimum dimension of 3 ft. 6 in. Bathrooms.

(2) Where a floor trap is used in connexion with any bathroom, the floor shall be constructed of cement concrete at least 4 in. in thickness, be impervious to moisture and finished with a smooth and readily cleansed hard wearing surface.

(3) The walls of a bathroom for a minimum height of 24 in. shall be finished as in paragraph (2) of this by-law.

Lighting and
ventilation of
water closets
and urinals.

190. (1) In this by-law, the expression "water closet" includes a urinal constructed in connexion with a building and any room or part thereof which is partitioned or divided into cubicles any one of which contains a pan, if the partitions or divisions are so constructed as to allow the free circulation of air throughout the room.

(2) A water closet entered directly from the external air shall be provided with a sufficient opening for lighting and ventilation of not less than 10 per cent of the floor area as near to the ceiling as practicable and communicating directly with the external air.

(3) A water closet not entered directly from the external air shall be sufficiently ventilated and the requirements of this paragraph shall be satisfied if—

(a) it is provided with a window, roof light or other approved opening which shall—

(i) open directly into the external air;

(ii) be so constructed that an area not less than one twentieth of the floor area of the water closet may open; and

(iii) provide permanent ventilation directly connected to the external air of not less area than 20 sq. in.; or

(b) it is provided with mechanical or other means of ventilation which give not less than three air changes per hour.

(4) Each cubicle forming part of a water closet shall have minimum dimensions of 4 ft. 6 in. by 2 ft. 6 in.

(5) A water closet, shall not communicate directly with any room intended principally for human habitation (other than a bedroom or dressing room, or a room intended to be used solely by one occupant) or for the manufacture, preparation or storage of food for human consumption.

(6) If the water closet is in a domestic building it shall, if it communicates with a bedroom or dressing room and there is no other water closet in the building which does not so communicate, be so constructed that it can be entered otherwise than through the bedroom or dressing room.

Latrine accom-
modation.

191. Unless the council is satisfied that latrine accommodation is unnecessary for a building, plans for the erection of any building, shall show, that sufficient and satisfactory latrine accommodation will be provided.

Hand washing
facilities.

192. Adequate hand washing facilities shall be provided, readily accessible from latrine accommodation.

193. The minimum standard of latrine accommodation, bath, lavatory basin and similar appliances required under these By-laws, shall be satisfied, if—

Latrine, bath,
etc. accom-
modation.

- (a) the provisions of the Sixth and Twelfth Schedules of these By-laws are complied with; and
- (b) the requirements of the Code of Practice C.P. 3 chapter 7 are complied with in every respect.

Sewers

194. (1) No person shall, without the written consent of the council, erect, or cause to be erected, a building over a sewer.

Buildings over
sewers.

(2) The council, may cause a building constructed in contravention of paragraph (1) of this by-law to be altered, pulled down, or otherwise dealt with and may recover as a civil debt any expenses incurred in so doing from the person erecting the same or the owner thereof.

195. If, in the opinion of the council, the introduction into a sewer of any matter, chemical, manufacturing trade or other refuse, including vapours or gaseous matters, or any steam, condensing water or heated liquid which either causes or may cause a nuisance, or involves danger to the health of persons entering the sewers, or is or may be injurious to the sewers or other works of the council, the council may, by written notice, served upon the person responsible, prohibit (from a date to be stated in such notice, not being earlier than fourteen days from the date of service of such notice) the introduction of any such matter as aforesaid into any sewer.

Power to
prohibit.

196. The council may refuse to admit into a sewer any trade waste, manufacturing liquid waste, or other effluent, unless it has been treated in an approved manner.

Trade
effluent.

197. The council, may, require the occupier of any premises from which trade effluent is discharged into a sewer to construct an approved manhole on his premises connected to the pipe or channel conveying such effluent. An officer of the council shall at all times have access to such manhole and may examine such effluent.

Manufacturing
premises.

198. Any person who shall throw or suffer to pass into any sewer or into any drain communicating with a sewer any matter or substance, which will interfere with the free flow of sewage, or by which any sewer or drain may be injured, shall be guilty of an offence.

Injurious
matters.

199. Any person who intends to connect a drain to a sewer shall give not less than twenty-four hours notice in writing to the council of his intention to do so.

Sewer connexion
notice.

200. (1) Subject to paragraphs (2) and (3) of this by-law, no person shall make any sewer connexion, unless a written permit authorizing the making of such sewer connexion shall have been issued by the council, and no person shall make any sewer connexion otherwise than under the direction of the council and in an approved manner.

Sewer
connexions to
be authorized.

(2) The council may itself undertake the construction of a sewer connexion and of that portion of the drain which connects the sewer to the boundary of the property concerned. The council may recover any expenses incurred in carrying out such work as a civil debt from the person requiring the connexion.

(3) The council may close, demolish, or remove any sewer connexion made by any person in contravention of this by-law and may recover as a civil debt from such person any expenses thereby incurred.

Premises outside the council area.

201. The owner of any premises outside the council area may, with the consent of the council and subject to these By-laws, cause any drain constructed upon or in connexion with such premises, to empty into any sewer within the council area upon such terms and conditions as may be agreed between such owner and the council:

Provided that no such person shall cause any drain to empty into such sewer until such terms and conditions have been agreed.

Sewage and waste water disposal.

202. (1) Except, as may be otherwise permitted under by-law 207 of these By-laws, unless the council considers other satisfactory means of disposal can be provided, sewage and waste water disposal other than through a sewer, shall be by means of one or a combination of more than one of the means approved by the council shown in the table set out hereunder—

No.	Fittings	Permeable Soils	Impermeable Soils
1. Water-closets .. .	Septic tank with radial arms	Conservancy tank.	
2. Sink waste and servants' quarters waste .. .	Septic tank, and/or soakage pit and/or radial arms.	Conservancy tank.	
3. Baths, lavatory basins and showers .. .	As for 2 but a separate waste water storage tank may be permitted with an approved overflow into the main system of disposal.	As for 2 but a separate waste water storage tank may be permitted with an approved overflow into the main system of disposal.	

N.B. (1) If the council so requires, a certificate shall be submitted setting out the results of a soil test for permeability.

(2) Every tank provided in pursuance of this by-law shall be of an approved size, construction and siting.

Radial arms.

203. (1) Unless the council otherwise agrees, septic tanks and soakage pits shall be provided with adequate radial arms.

(2) The disposal shall be so arranged as not to cause site pollution or to become a nuisance.

(3) The trenches forming radial arms shall be cut square to proper gradients and suitably level and filled with approved hardcore properly graded and at ground level suitably blinded with fine materials not less than 9 in. deep.

204. (1) Unless, the council otherwise agrees, the capacity of a waste water storage tank shall not exceed one hundred gallons.

Waste water storage tanks.

(2) An approved pump shall be fitted for emptying such tank unless gravity discharge is used.

(3) The access to such storage tank shall be provided through a medium-weight, hinged, cast iron manhole cover.

(4) Unless, the council otherwise agrees, a suitable overflow shall be provided to such storage tank which shall discharge into the main system of drainage disposal.

205. Unless, the council otherwise agrees, no waste water shall be discharged by means of open channels.

Prohibition of open channels.

206. Where it is expected that within two years from the date of approval of the plans of a building that the owner of such building may be required to connect the drains thereof to a sewer, the council may permit such modification in the construction as may be required by these By-laws, and may also allow the drains to be constructed in a manner which will simplify the eventual connexion to the sewer.

Temporary construction.

207. The council may permit the use of pail closets.

Pail closets.

208. A pail closet constructed in connexion with a building shall comply with the following requirements of this by-law—

Pail closets requirements

- (a) the only entrance to the pail closet shall be from the external air or from a room which can itself be entered only from the external air, not being a room intended for human habitation or for the manufacture, preparation or storage of food for human consumption;
- (b) the pail closet shall be in such a position as not to render liable to pollution any spring or stream of water, or any well used or likely to be used by man for drinking or domestic purposes, or for the manufacture or preparation of articles of food or drink for human consumption, or for the cleansing of vessels with a view to the preparation or sale of such articles;
- (c) the pail closet shall be provided with a sufficient opening for lighting and ventilation as near the ceiling as practicable, and communicating directly with the external air, and the closet shall be effectively fly-proofed;
- (d) the floor of the pail closet shall be of non-absorbent material, which shall in every part, including the part beneath the seat, be not less than 3 in. above the surface of the adjoining ground and have a fall or inclination approved by the council;
- (e) the receptacle for faecal matters (hereinafter in this by-law called "the receptacle") shall be of non-absorbent material so constructed and placed, that its contents shall not escape by leakage or otherwise, or be exposed to rainfall or to the drainage of any waste water or liquid refuse;
- (f) every receptacle shall be of an approved design;
- (g) no part of a pail closet or of the receptacle therein shall communicate with any drain;

- (h) the containing walls of the space beneath the seat, except such opening as may be necessary for affording access to the space, shall be impervious to moisture;
- (i) the seat, the aperture in the seat, and the space beneath the seat, shall be of such dimensions that the receptacle can be so placed and fitted beneath the seat as to prevent the deposit of faecal matter and urine elsewhere than in the receptacle;
- (j) adequate access shall be provided for cleansing the space beneath the seat, and for removing the receptacle therefrom or placing and fitting it therein;
- (k) the pail closet shall be sited in such a position as to afford ready means of access thereto for the easy removal of the receptacle without it being carried through any building; and
- (l) approval access to the pail closet shall be provided.

Pit closets.

209. (1) No pit closet shall be constructed without the consent of the council.

(2) A pit closet shall not be constructed within 15 ft. of any building or any plot boundary, nor in any area within which a council conservancy service operates.

(3) With the consent of the council, the distance specified in by-law 209 (2) of these By-laws may be further reduced.

Plumbers and drain layers.

210. (1) The work of plumbing and drain-laying, which requires a supply of water from the council's water mains or for the effluent from any building to discharge into the council's sewers, or into a septic tank or conservancy tank, shall only be undertaken by licensed plumbers and/or drain-layers.

(2) The licensing of plumbers and drain-layers by the council, shall be in the manner laid down from time to time and subject to the following requirements—

- (a) any person who applies for a licence may be required to submit himself for a test set by the council; and
- (b) an examination fee not exceeding Sh. 70 shall be payable to the council by each person taking the test.

(3) Any person who carries out or causes to be carried out any work specified in paragraph (1) of this by-law otherwise than by or under the direct supervision of a licensed plumber or drainlayer shall be guilty of an offence.

(4) Prior to the issue of a plumber's licence or a drainlayer's licence to any person, such person shall be required to sign a register which shall contain a declaration that he accepts such licence subject to, and that he will conform with, any conditions attached thereto.

(5) Any person to whom a plumber's licence or a drainlayer's licence has been issued, shall produce his licence at the request of a duly authorized officer of the council.

(6) Any licence issued to any plumber or drainlayer under this by-law, may be cancelled or suspended, if the council is satisfied that such licensed plumber or such licensed drainlayer has, either by himself or his workmen, caused or permitted any plumbing or drainlaying work to be carried out in a negligent or unworkmanlike manner or used materials of less quality than the minimum specified in these By-laws.

(7) Unless, the council otherwise requires, on completion of any plumbing or drainlaying work, a certificate signed by the licensee must be sent to the council testifying that the work complies with the relevant provisions of these By-laws.

(8) A licensed plumber or drainlayer, shall employ to carry out the manual work involved in fixing or altering any pipes or other apparatus connected to the council's water supply or any sewerage system, a licensed person and such person, shall, whilst so employed have available for inspection on or near the site on which he is employed the Trade Testing Certificate (Grade I) issued to him by the Kenya Government:

Provided that if, the council so agrees, some of the aforementioned work may be carried out by licensed plumbers in the lower grades, namely grade II and grade III.

(9) The council may dispense with the requirements of the whole or any part of this by-law in relation to the whole or any part of the area under the council's jurisdiction.

Means of escape in case of fire

211. (1) The plan of a proposed building of the warehouse class or any addition to such a building, shall show reasonable means of escape in the event of fire.

Buildings of the
warehouse class

(2) If the council considers, that any building of the warehouse class, in which more than ten persons are employed on any floor above the ground floor, has insufficient means of escape in the event of fire, it shall require the owner or the occupier of the premises to execute such alterations as the council deems necessary to provide sufficient means of escape. The council may require the owner to suspend any process or stop work, as the case may be, until the necessary works have been carried out.

(3) All means of escape shall be properly maintained and kept free from any obstruction.

Cap. 514.

(4) Compliance with the requirements in this by-law does not lessen, alter or prejudice in any way the requirements of the Factories Act.

212. (1) Any building which exceeds two storeys in height, and in which the floor of any upper storey is more than 20 ft. above the surface of the street or ground on any side of the building, shall be provided with such means of escape in case of fire, as the council may deem necessary.

Domestic and
public buildings.

(2) The minimum requirements for certain groups of public buildings as set out in the Sixth Schedule to these By-laws, will satisfy by-law 212 of these By-laws.

Access from fire escapes.

(3) As a guide to assessing the requirements of ingress and egress, safety and welfare, which will reasonably ensure the safety of the public and other users in various portions of the buildings of the kind referred to in by-laws 211 and 212 of these By-laws, the number of persons and the population density (where not specifically stated or shown on lay-out or seating plans submitted) shown in the Appendix to the Sixth Schedule, and for calculating the number and size of exits, formulae 1 and 2 both shown in the Appendix to the Sixth Schedule to these By-laws will form a reasonable basis.

213. Every fire escape from an upper storey, shall terminate at ground level and at a point, where the dispersal into a safe area can be quickly accomplished:

Provided that, where a safe area can be localized on an upper floor of a building, which is easily accessible for the purpose of rescue, the means of escape may terminate at this point, if the safe area is of no greater height than 20 feet above the adjoining ground level, and is railed off or otherwise fenced to provide adequate protection for the persons using it.

Fire fighting.

214. In any public building, or building of the warehouse class, or domestic building, where any floor is more than 20 ft. above the ground level, the council, may require the provision of such fire fighting equipment as it considers necessary, including one or more of the following—

- (a) hydrants, hose, hose reels and fire appliance external connexions;
- (b) portable fire appliance;
- (c) sprinkler, drencher and waterspray projector system;
- (d) water storage tanks; and
- (e) dry risers.

Scheduled special areas and special buildings

Scheduled residential accommodation.

215. In high density or low cost residential areas, where approved by the council, the requirements of by-laws 216 and 227 of these By-laws, shall prevail, where they conflict with any other of these By-laws.

Habitable rooms.

216. Every habitable room shall have a superficial area of not less than 75 sq. ft. with a minimum width of 6 ft. 6 in. and, shall contain a minimum area of 40 sq. ft. for each person accommodated therein. In every dwelling there shall be constructed not less than one habitable room having a superficial floor area of not less than 120 sq. ft.

Latrines and ablutions.

217. (1) A latrine and an ablution, shall be provided either in separate compartments, in which case each compartment shall have minimum dimensions of 4 ft. 6 in. by 2 ft. 6 in., or in a combined compartment having a minimum area of 18 sq. ft.

(2) Where a combined compartment is provided, separate provision for the washing of utensils, shall be made to the satisfaction of the council.

(3) The walls of any latrine or ablution, shall have a smooth and readily cleansed surface to a height of not less than 4 ft. 6 in.

above the floor level and trowelled to a smooth finish, and the floor shall be likewise finished and laid to proper falls. The junction between the floor and the wall shall be formed with a cement cove of similar construction of not less radius than 1½ inches.

(4) For each family or group not exceeding six persons, there shall be provided one latrine and one ablution, or one combined water-closet and ablution as required under paragraph (1) to this by-law.

(5) Unless, the council otherwise agrees, an ablution shall be fitted with a shower which shall be operated by an approved self-closing valve.

(6) A latrine or an ablution compartment shall have a floor constructed of cement concrete not less than 2 in. in thickness.

(7) If the pan is sunk into the floor it shall be encased in cement concrete not less than 3 in. in thickness.

218. (1) Sufficient properly designed cooking areas shall be provided with suitable provision for the storage of food. Cooking areas.

(2) If the cooking area is in the form of a covered recess or verandah, it shall have a superficial area of not less than 24 sq. ft. with a minimum dimension of 3 ft. 6 in.

(3) If the cooking is proposed to be carried on inside a habitable room, the area of such room shall be increased to not less than 50 sq. ft. for each person accommodated therein.

(4) If a kitchen is provided in a dwelling, it shall be of not less than 25 sq. ft. having a minimum dimension of not less than 4 ft. 6 in.

(5) A flue shall be provided in every internal cooking space. Unless other satisfactory provision is made, the flue shall be constructed to have an internal unobstructed area of not less than 27 sq. in. and shall be constructed of suitable materials and terminated at a point not less than 3 ft. above the roof level adjacent thereto, or not less than 1 ft. above the level of the ridge of the roof.

219. (1) Facilities shall be provided for washing clothes. The requirements of this by-law shall be satisfied if washing slabs or splash areas are constructed at the minimum rate of one per six persons of a minimum size of 3 ft. by 2 ft. for the slab and 3 ft. by 3 ft. for the splash area. The area for additional persons shall be increased by 1 sq. ft. for each additional person. Washing facilities.

(2) The floors shall be constructed of concrete 3 in. thick, laid on a suitable foundation. They shall be trowelled to a hard wearing easily cleansed surface and kerbed in such a manner to contain the water.

(3) The floor shall be laid to suitable falls and drained to an approved point of dispersal.

(4) Unless, the council otherwise agrees, each washing slab or splash area provided shall be fitted with a ¼ in. stand pipe and bib cock connected direct to the water main. Additional stand pipes for communal use may be required by the council.

220. (1) Adequate paths of *in situ* concrete 3 in. thick, or of approved concrete slabs, or of other approved material and thickness, not less than 2 ft. wide, shall be provided between the housing and ablution blocks. Paved areas

(2) The paths, shall be raised above the surrounding ground level, and constructed to a reasonable finish laid to cross falls.

(3) If, the council considers it to be necessary, a part or whole of the plot shall be paved as described above.

Refuse bins.

221. (1) A concrete paved area constructed as provided for in by-law 220 of these By-laws, shall be provided for every refuse bin.

(2) The paved area, shall be surrounded on three sides by an approved kerb to contain the refuse spillage.

(3) Not less than one refuse bin, shall be provided for each family unit or for every six persons accommodated.

Party walls.

222. (1) Party walls shall—

(a) have a minimum fire resistance of half an hour;

(b) be carried up to the underside of the roof covering which shall be bedded on to the wall; and

(c) extend to the external face of the external walls.

(2) Conformity with by-law 236 of these By-laws, in respect of open roofs will not generally be required by the council.

(3) In the case of non-combustible sheeted roof construction purlins may be taken through a party wall provided that they are solidly embedded in the party wall.

Internal walls.

223. All internal walls shall be colour-washed with a hard-wearing material.

Employees' housing.

224. If so required by the council, houses erected by employers for occupation by their employees, shall be fenced to its satisfaction.

Height of habitable rooms.

225. (1) If a ceiling is provided, the average height of a habitable room shall be not less than 7 ft. 9 in. with a minimum height of 7 ft. and the portion below 7 ft. 9 in. must not exceed 25 per cent of the floor area.

(2) If a ceiling or similar insulation is not provided, the average height measured to the underside of the roof covering, shall not be less than 8 ft. 3 in. with a minimum height of 7 ft. 6 in. and the portion below 8 ft. 3 in. must not exceed 25 per cent of the floor area.

(3) Height in excess of 9 ft. 3 in. shall not be included in calculating the average height.

Water.

226. The supply of water, shall be to the satisfaction of the council, and if required, provision shall be made for water storage.

Dormitory accommodation.

227. Where dormitory accommodation is provided—

(a) a minimum of 40 sq. ft. per person and a minimum ceiling height of 7 ft. 9 in. shall be required, provided that if two-tier bunks are used, the floor area may be reduced to a minimum of 300 sq. ft. per person and the ceiling height increased to 10 ft.;

(b) sanitary accommodation shall be provided as required under by-laws 191 to 193 of these By-laws.

PART IV
ADVERTISEMENTS

228. Application for consent to display an advertisement, where required, shall be made in accordance with the requirements of Part I of the First Schedule to these By-laws.

Application.

229. (1) Except, as provided in by-law 230 of these By-laws, a person who shall display or suffer or permit to be displayed, any advertisement except with the written consent of the council and subject to such terms and conditions as the council may require, shall be guilty of an offence.

Consent required.

(2) For the purpose of any proceedings under paragraph (1) of this by-law, if an advertisement for a proprietary product is displayed without the consent of the council, the manufacturers of such product or the principal agents in Kenya shall, until the contrary is proved, be deemed to have caused the same to be displayed.

230. The consent of the council shall be deemed to be granted to a non-illuminated advertisement—

Permitted advertisements.

(a) when attached externally to shop premises—

- (i) the whole of which is situate above or below the level of the shop window;
- (ii) which indicates solely the name of the person, partnership or company carrying on business at the premises and the nature of such business;
- (iii) no part of which is displayed more than 12 ft. above the level of the adjoining pavements or the top edge of the fascia of the canopy to the ground floor premises, if any whichever is the higher;
- (iv) the area of which, together with the area of any other advertisement on the same face of the premises to which it is attached, does not exceed 1/16th of the area of such face up to the height permitted for advertisements in paragraph (a) (iii) of this by-law;
- (v) the letters or figures of which are attached directly to the fascia of the premises or canopy without any intervening board; and
- (vi) no letter or figure of which is more than 12 in. in height or where the advertisement is displayed on the fascia of a canopy 2/3rds of the depth of such fascia, whichever is the less;

(b) when attached externally to office premises—

- (i) which relates to any person, partnership or company, carrying on a profession, business or trade at the premises where it is displayed;
- (ii) no part of which is displayed more than 12 ft. above the level of the adjoining pavement;
- (iii) which is displayed at an entrance to the premises to which the advertisement relates; and

(iv) the area of which together with the area of any other advertisements of a like nature on the same road frontage does not exceed 10 sq. ft.:

Provided that, in the case of several occupiers in the same premises, no individual advertisement shall exceed 2 ft. 0 in. by 9 in.

(c) which is displayed inside a building unless such advertisement, in the opinion of the council, interferes materially with the light or ventilation of such building;

(d) which is displayed on or near a place of public worship and relates thereto and is of no greater area than 20 sq. feet;

(e) which is displayed on a plot and relates to—

(i) the sale or letting of the plot or any premises thereon, and does not exceed 20 sq. feet in area;

(ii) building works in progress on the plot;

(f) which is displayed on a residential plot and indicates only the names of the persons occupying premises on the plot and the address number of such premises, if any, and is of no greater area than 3 sq. ft.:

Provided that—

(i) should the council consider an advertisement to be objectionable, notwithstanding that consent may be deemed to be granted to the display of such advertisement under this by-law, the council may require that an application for express consent be made under by-law 228 of these By-laws and may deal with such application as if this by-law had not been made; and

(ii) in no case shall an advertisement relating to a proprietary article be displayed outside a building without the express consent of the council; and

(iii) signs erected under subparagraph (e) of this by-law shall be removed at the request of the council.

Unauthorized advertisements.

231. (1) The council may serve a notice on any person displaying an advertisement for which consent has not been granted under these by-laws, requiring the removal of such advertisement within such time and in such manner as may be prescribed in the notice.

(2) For the purpose of this by-law, the occupier of any premises shall be deemed to be displaying any advertisement attached thereto.

Licences.

232. (1) No person shall—

(a) display an advertisement other than one for which consent is deemed to be granted under by-law 230 of these By-laws or one which is not illuminated and contains no representation other than the name and occupation of the person, partnership or company occupying the premises or part thereof on which it is displayed other than a hanging sign; or

(b) erect or maintain a hoarding for the purpose of attaching advertisements thereto without a licence so to do issued by the council.

(2) A licence issued in respect of an advertisement or a hoarding shall expire on the 31st day of December in the year in respect of which it is issued.

(3) The following fees shall be payable to the council at the time of issue of the licence to display advertisements:—

(a) Non-illuminated advertisements and hoardings	One shilling per sq. foot with a minimum fee of twenty shillings.
(b) Illuminated advertisements	Fifty shillings for first 10 sq. feet. Twenty shillings for each additional 10 sq. feet or part thereof.

(4) The council's decision as to the area of any advertisement or hoarding shall be final.

233. The council may remove and dispose of any advertisement or hoarding placed or displayed on or over any unalienated public land or upon any bridge, tree, fence, pole, post or other structure or erection situate on any street or unalienated public land, without the written consent of the council or otherwise than in accordance with any conditions attached to such consent.

Removal of
advertisements.

234. No person shall erect any hoarding or display an advertisement in such manner as to obscure or hinder the interpretation of any road traffic sign, railway signal, or signal for the control or safety of navigation by air, or so as otherwise to render hazardous the use of any highway, railway or airfield.

Dangerous
advertisements.

235. (1) No person shall display or cause to be displayed any notice or poster relating to an election, public meeting, sporting event or other occasion to which it is intended to draw the attention of the public (otherwise than from inside a building) without the consent of the council and subject to such conditions as the council may impose.

Posters.

(2) A deposit of ten shillings shall be paid to the council by the applicant in respect of each notice or poster referred to in paragraph (1) of this by-law, for which consent is granted:

Provided that no one applicant shall be required to deposit more than two thousand shillings.

(3) In the event of any breach of the conditions under which consent is granted by the council for the displaying of any notice or poster referred to in paragraph (1) of this by-law, the council may retain the whole or any part of the deposit made under paragraph (2) of this by-law.

(4) For the purpose of any proceedings under this by-law, the person who signs the form of application for consent to display an advertisement, shall be deemed to have caused the same to have been displayed and if no such form has been submitted to the council, the person who in the opinion of the council is most likely to benefit from an advertisement shall, until the contrary is proved, be deemed to have caused its display.

PART V—GENERAL

Domestic buildings generally.

236. (1) All parts of a domestic building shall be finished to a habitable standard and the requirements of this by-law shall be satisfied if—

- (a) walls are properly plastered or finished with other approved material;
- (b) walls where joining the floor are provided with a skirting or finished in an approved manner;
- (c) ceilings or open roofs are properly under-drawn to prevent the access of dust and flies; and
- (d) floors are finished with a hardwearing surface which can be easily cleaned.

(2) If, required by the council, windows shall be glazed, and, where privacy is required, obscured glass used.

Treatment of timber and metal.

237. All external faces of walls, which are plastered or are treated with concrete, shall have an approved durable finish. All exposed timber and metal surfaces shall be protected to the satisfaction of the council.

Hoardings or scaffoldings.

238 (1) If, required by the council, a person, who erects, alters or demolishes a building, shall erect and properly maintain throughout the period of work an approved hoarding.

(2) No person shall erect a hoarding or scaffolding on or over any street without first obtaining a licence from the council. An application for a licence shall be in writing and at the time of making the application the applicant shall pay to the council the appropriate licence fee set out in the Tenth Schedule to these By-laws.

(3) A person erecting a hoarding or scaffolding to which this by-law applies shall—

- (a) enclose the site and protect the public to the satisfaction of the council;
- (b) erect it so that the unloading or loading of materials causes a minimum obstruction to the use of any street;
- (c) contain all material, debris and builder's plant inside the hoarding;
- (d) keep it properly lighted throughout the periods of darkness and paint white any corners and projections;
- (e) not use it or permit it to be used for advertisement purposes, except with the consent of the council;
- (f) maintain it at all times in good order and condition to the satisfaction of the council;
- (g) remove it when required to do so by the council or at the end of the period for which it is licensed under paragraph (2) of this by-law;
- (h) indemnify and keep indemnified the council against any expense, loss, claim or suits arising out of or in connexion with the hoarding or scaffolding.

239. (1) Any person who, except, with the prior consent of the council, deposits or causes or permits to be deposited any builders' materials, builders' plant or builders' debris upon any street, shall be guilty of an offence.

Removal of
materials, etc

(2) If any building materials, etc., is deposited on a street in contravention of paragraph (1) of this by-law, the council without prejudice to its right to take proceedings in respect of such contravention, shall have power to remove the same and may, if it thinks fit, sell such materials, plant or debris.

(3) Any expenses incurred by the council in removing any materials, plant or debris as aforesaid (after deducting any amount realized by the sale of the whole or part thereof) shall be recoverable as a civil debt from the person who deposited or caused or permitted to be deposited such materials, plant or debris upon the street.

240. (1) A person intending to demolish a building or part of a building, shall notify the council in writing of such intention at least three clear days before the work is commenced.

Demolition.

(2) A building or part of a building shall be demolished in a manner satisfactory to the council, and the council may if it deems fit require screening or watering to avoid dust nuisance.

(3) Throughout the demolition or partial demolition, all parts of the remaining structure shall be left in a safe condition.

(4) The owner or contractor shall, on completion of the demolition, ensure that all materials and debris not forming part of any remaining structure or in any way supporting any other structure, are removed from the site and that the site is left in a clean and tidy condition.

241. If because of the erection, alteration or demolition of a building or of a hoarding or scaffolding in connexion with such work, a street is damaged, the council may either—

Damage to
streets.

(a) make good the damage to such street and recover from the owner or developer of the plot concerned any expenses reasonably incurred in so doing, or

(b) serve a notice in writing upon the owner or developer of the plot concerned, requiring him to make good to the satisfaction of the council, the damage to such street within such period as may be specified in the notice.

242. (1) Any person, who shall erect a building otherwise than in accordance with the approved plans relating to such building, shall be guilty of an offence.

Disregard
of approved
plans.

(2) The council may serve upon the owner of a building, referred to in paragraph (1) hereof, a notice requiring him within the period specified in such notice—

(a) to execute such work as may be prescribed therein to make the building conform to the requirements of these By-laws; or

(b) to demolish and remove the building.

Ruinous or
dangerous
structures.

243. (1) The owner of a building, shall not permit the building or any part thereof, to become or remain in a ruinous, dangerous or dilapidated condition.

(2) Where any building appears to the council to be in a ruinous, dangerous or dilapidated condition the council may—

(a) serve upon the owner of such building a notice in writing, requiring him within the time specified therein, to shore up, secure, repair, renew or otherwise make safe, to the satisfaction of the council, such building, or to remove the same; or

(b) take such steps by way of shoring up or securing or otherwise making safe such building, as in its absolute discretion, it deems necessary; and for that purpose may enter upon the premises and upon any adjoining premises, which it may be necessary to enter for the said purpose; and the owner of such building shall be liable for, and shall pay to the council on demand all costs incurred, including any damages which it may have paid arising from its entry thereon and work incidental to the removal of or making safe such building.

(3) In the event of the owner failing to commence the work specified in the notice referred to in subparagraph (2) (a) of this by-law, within three days after the expiration of time specified therein, or failing to complete the said work within the time specified in such notice, the council may forthwith proceed under subparagraph (2) (b) of this by-law.

Sale of
materials.

244. (1) If a building is demolished by the council under any of the powers conferred by these By-laws, the council may remove and sell the materials thereof or any portion of them, and apply the proceeds of the sale in or towards payment of the cost and expenses incurred by it in relation to such work and shall pay the balance, if any, to the owner.

(2) If the proceeds of such sale are insufficient to cover the expenses which the council has incurred, the balance shall be recoverable as a civil debt from the owner.

Closing of
streets.

245. (1) In connexion with the carrying out of any operations under these By-laws, the council may, temporarily close any street or public place and may erect such hoarding, barricades or other structures as it may consider necessary for that purpose, and in the event of such closure having been occasioned by the condition of a building, the owner of such building shall pay to the council on demand, all costs and expenses incurred by it in connexion with the erection and subsequent removal of such hoardings, barricades or other structures.

(2) Any person who shall, except with the authority of the council, remove or interfere with any such hoardings, barricades or structure erected under the provisions of this by-law or climb, pass or attempt to climb or pass such hoarding or barricade or structure, shall be guilty of an offence.

246. Any person who, except with the written permission of the council, uses or permits the use of any building or part thereof, erected for the specific purpose of housing domestic servants for the accommodation of any person other than such servants employed on the plot by the occupier of a building on the plot, shall be guilty of an offence.

Domestic
servants'
quarters.

247. The council may by written notice, require the owner of any plot to pave any open spaces therein with stone or cement concrete or other impervious material to its satisfaction within a period to be specified in such notice.

Paving of
open spaces.

248. (1) Every building, which is used or designed to be used for the storage or sale of foodstuffs or for the processing or preparation for sale of foodstuffs, shall be properly rat-proofed.

Rat proofing

(2) The requirements of paragraph (1) of this by-law shall be satisfied if—

- (a) all outer doors and trap doors of such building, if constructed of wood, are adequately protected by metal plates or other approved material and all doors are hung so that no gap exceeds $1\frac{1}{2}$ in.;
- (b) in any ground floor storey or any storey below that level, all windows or parts thereof which are made to open, are screened with strong metal meshwork or wire netting. The mesh of the metal screen shall not exceed one half inch measured across the mesh;
- (c) pipes fixed externally to the walls are provided with suitable rat guards;
- (d) the roof is constructed so as to prevent the entry of rats into the roof space;
- (e) the walls being of corrugated sheets—
 - (i) the case of the sheets are so fitted that rats cannot pass thereunder;
 - (ii) the cavities formed by the corrugations of such sheets are closed and sealed at the base;
 - (iii) at door and window openings, such corrugated sheets are closely and firmly fitted and fixed to the frames of the doors and windows; and
 - (iv) where corrugated sheets overlap, they are firmly fitted so as to be in close contact with each other;
- (f) ventilators are protected by mesh as in paragraph (2) (b) of this by-law; and
- (g) where any cables, pipes or wires pass through any wall, floor or roof, the apertures through which they pass are sealed.

249. (1) No person shall erect a canopy without first obtaining a licence from the council so to do. Canopies.

(2) A canopy shall—

- (a) be of an approved design and construction;
- (b) be not less than 9 ft. 6 in. above the level of the footway;

(c) not extend outwards from the building so as to be nearer the vertical plane of the kerb line of such footway than 2 feet.

(3) The upper surface of every canopy, shall be impervious to moisture and drained in an approved manner, and designed to prevent the discharge of water directly onto a street.

(4) Unless, the council otherwise agrees, no load shall be placed upon a canopy.

(5) If it is considered desirable by the council, that a canopy should be erected in front of a new building, the council may require the owner thereof to provide for it in the design of such building.

Projections.

250. Projections other than canopies, may be permitted to overhang a street, provided that they are of an approved design and construction.

Rainwater disposal: existing building.

251. (1) If, in the opinion of the council, a nuisance may arise because a building is without adequate provision for conveying water to the public drain, or if such provision has been made and has fallen into disrepair, the council may serve a notice on the owner of such building, requiring him, to execute such works as may be necessary to convey such water from the building to any public drain, which is within twenty yards of any part of such building or otherwise suitably dispose of such water to the satisfaction of the council within the period specified in such notice.

(2) If, the owner of such building, fails or neglects to comply with the requirements of the said notice, the council may enter upon the premises and execute such works as in its opinion are necessary, and may recover any expenses so incurred from the owner as a civil debt.

Unauthorized building and change of use.

252. (1) Any person, who shall erect or permit the erection of a building, without first obtaining the approval of the council to plans submitted in accordance with these By-laws, shall be guilty of an offence.

(2) Any person who shall, except with the permission of the council, use any building or part of a building otherwise than for the purpose specified in the approved plan thereof, shall be guilty of an offence.

(3) An owner of a building who shall, except with the permission of the council, permit such building or any part thereof to be used otherwise than for the purpose specified in the approved plan, shall be guilty of an offence.

(4) In any proceedings under this by-law it shall be deemed until the contrary is proved, that where a building or any part thereof, is used otherwise than in accordance with the approved plan thereof, such use is with the permission of the owner of the building.

(5) In this by-law "purpose" means the particular purpose for which each part of a building was erected and the approved plan shall be *prima facie* evidence of such purpose.

253. (1) To secure conformity with the requirements of these By-laws, a notice may be served, in the manner described in by-laws 254 and 255 of these By-laws, on a person who in any way contravenes these By-laws.

Contravention
of By-laws.

(2) Such notice shall prescribe the period which will be allowed to rectify the contravention and to notify the council in writing of compliance with the requirements of the notice.

254. (1) A notice, order or other document issued or made by the council in pursuance of these By-laws, shall be sufficiently authenticated if signed by or on behalf of the clerk and such signature may be endorsed by means of a rubber stamp or similar device.

Notices and
orders.

(2) No defect in the form of any notice or other document issued or made under these By-laws shall invalidate or render unlawful any administrative action, or be grounds for exception to any legal proceedings which may be taken in the matter to which such notice or document relates, provided that the requirements thereof are substantially correct and intelligibly set forth.

255. (1) Notices, orders and any other documents required or authorized to be served under these By-laws, may be served by delivering the same to or at the residence or place of business of the person to whom they are addressed, or if addressed to the owner or occupier of premises, by delivering the same, or a true copy thereof to some person on the premises, or, if there be no person on the premises who can be so served, by fixing them on some conspicuous part of the premises. Such notices, orders, or other documents may also be served by post by a prepaid registered letter and, if served by post shall be deemed to have been served at the time when the letter containing the same would be received in the ordinary course of post and in proving such notice, it shall be sufficient to prove that the notice, order or other document was properly addressed and put in the post.

Service of
notices and
orders.

(2) For the purpose of this by-law "properly addressed" shall mean addressed to the last known postal address of the place of residence or business of the person to whom it is addressed.

(3) Any notice required to be given to the owner or occupier of any premises may be addressed to him by the description of "owner" or "occupier" of the premises (naming them) in respect of which the notice is given without further name or description.

256. Officers of the council duly authorized, shall have the right to inspect and visit any plot or building in order to ascertain that the requirements of these By-laws are being observed.

Official
inspections.

257. (1) A person who contravenes or fails to comply with any of the provisions of these By-laws shall be guilty of an offence.

Penalties.

(2) Any person who is guilty of an offence under these By-laws shall be liable to a fine not exceeding two thousand shillings or imprisonment for a term not exceeding six months or to both such fine and such imprisonment and if the offence is of a continuing nature, to a further fine not exceeding twenty shillings for every day or part thereof during which such offence shall continue but in any event the aggregate of any such fine imposed shall not, in the case of any one continuing breach of the by-law exceed two thousand shillings.

Execution of work required by a notice.

(3) Any person who shall fail to comply with any of the requirements of a notice served under these By-laws within the time specified in such notice, shall be guilty of an offence and liable to a fine not exceeding twenty shillings for every day or part of a day in which he shall be in default but in any event the aggregate of any such fine shall not exceed two thousand shillings.

258. If a person shall fail to comply with any or all of the requirements of a notice served under these By-laws the council may—

- (a) do or cause the work or thing required by such notice to be done and may recover the cost incurred from the person in default as a civil debt; or
- (b) cause a complaint relating to such failure to be made before a magistrate and such magistrate may thereupon issue a summons requiring the person upon whom the notice was served to appear before the court and if the court is satisfied that a contravention of these By-laws exists, the court may make an order on such person requiring him to comply with all or any of the requirements of the notice within a time specified in the order.

Charges to cover supervision.

259. In all cases where, in accordance with the requirements of these By-laws, any work is carried out by the council in respect of which the council is entitled to recover the cost from any person under these By-laws, there may be included in the cost so claimed and recoverable, a sum not exceeding 10 per cent of the expenses incurred to cover incidental administrative and overhead costs.

FIRST SCHEDULE

DEPOSIT OF PLANS AND OTHER PARTICULARS

Part A—General instructions as to the foregoing

1. Plans, sections and details shall be drawn or reproduced in a clear and intelligible manner on suitable and durable material and notices and other particulars shall be in writing on the form and in the manner hereinafter prescribed.

2. Plans and sections shall be of a scale of not less than 1 in. to every 8 ft. or, if the building is so extensive as to render a smaller scale necessary, not less than 1 in. to every 16 ft.; and details to a scale of not less than 1 in. to every 44 ft., and key plans to a scale of 1 : 2,500. The scale shall be indicated on all plans, sections and drawings and the north point shall be indicated on all block plans and key plans.

3. Plans, sections and details shall be submitted in triplicate sets, one set at least of which shall be drawn or printed on approved permanent material and with the building materials to be used identified by colour or shading.

4. Every plan, section, drawing or other document shall be signed by the developer, or by a person representing himself to be his duly authorized agent. If it is signed by such agent it shall state the name and address of the person on whose behalf it is submitted.

5. Every such document, in duplicate or triplicate as may be required, shall be sent or delivered to the offices of the council.

6. Whether approved or not, one set of the plans and drawings shall be retained by the council. In the case of leasehold land one set will be retained for the Commissioner of Lands.

7. All plans which relate to the erection of a building which comes within the scope of the Factories Act must be endorsed with the stamp of approval of the Chief Inspector of Factories.

Cap. 514.

Part B—Notice of intention to erect a building partly exempted from the operation of By-laws in pursuance of by-laws 11 to 14

8. A block plan, with plots numbered properly or otherwise identified, showing the size and position of the building and its relationship to adjoining buildings and giving an indication of its distance from the boundaries of the plot.

9. (1) Particulars, so far as necessary to show whether the building complies with any of the requirements of these By-laws which apply to it and with the conditions of exemption in by-laws 11 to 14 of these By-laws, of—

- (a) the intended use of the building;
- (b) the dimensions of the building;
- (c) the materials of which it will be constructed; and
- (d) the mode of drainage.

(2) For a submission in respect of a building to which by-law 12 of these By-laws applies, in addition to the foregoing, plans and sections showing the position, form and dimensions of the walls, floors and several parts of the building.

Part C—Notice of intention to erect, alter or extend a factory chimney

10. Plans and sections so far as necessary to show whether the chimney, the alterations or extensions thereof comply with these By-laws; and, if the shaft is to be constructed otherwise than in pursuance of by-laws 119 to 123 of these By-laws—

- (a) a specification of the materials proposed to be used;
- (b) the proportions of the materials in any concrete or mortar or the specified minimum strength of the concrete or mortar;
- (c) drawings showing the details of construction; and
- (d) calculations of loading and strength.

Part D—Notice of intention to make an alteration or extension of building

11. In the case of alterations not involving any extension of a building, plans and sections as required by paragraph 21 of this Schedule of the alterations and of the building, so far as such plans and sections are necessary to show whether the proposals will comply with these By-laws.

12. In the case of an extension of a building—

(a) the particulars referred to in Part H of this Schedule in relation to the extension as if the extension were the building therein referred to; and

(b) the specific use of each and every part of the building; and

(c) plans and sections are required by paragraph 21 of this Schedule of the building so far as affected by the extension, so far as such particulars, plans and sections are necessary to show whether the proposals will comply with these By-laws.

Part E—Further particulars which may be required

13. A specification of the materials proposed to be used.

14. The proportions of the materials in any concrete or mortar or the specified minimum strength of the concrete or mortar.

15. Drawings showing the details of construction and in particular of any framework, and the sizes and position of any reinforcing metal.

16. Calculation of loading and strength.

Part F—Notice of intention to make, and a description of, a material change in the purposes for which the building or part of the building is used

17. A block plan showing the size and position of the building and its relationship to adjoining buildings.

Part G—Notice of intention to execute works or install fittings in connexion with a building

18. Particulars of the works or fittings so far as necessary to show whether they comply with these By-laws.

19. Where it is proposed to execute works of drainage or to construct or to install a water-closet, urinal, pail closet, septic tank, conservancy tank, storage-pit or soakage pit, a block plan showing the following particulars, or so many of them as are applicable to the proposal and are necessary to show whether the plan complies with these By-laws. The plan, shall, if the works or installations are in connexion with operation to which Part H of this Schedule relates, be the block plan required by paragraphs 8 or 22 of this Schedule—

(a) the position of the installation;

(b) the lines of drainage, the size, depth and inclination of every drain, and the means to be provided for the ventilation of the drains;

(c) the position and level of the outfall of the drains and of every manhole;

(d) where the drainage is intended to be connected to a sewer, the position of the sewer; and

(e) where the council require, a transverse section showing the lines of drainage and the grading of the land in relation thereto.

20. Where it is proposed to construct or install a water-closet, urinal, pail closet, septic or conservancy tank, soakage-pit or well or water tank or cistern for the storage of rain water for human consumption, plans and sections of the works or fittings so far as necessary to show that they comply with these By-laws.

Part H—Notice of intention to erect a building for which there is no relaxation of the operation of building by-laws

21. A plan of every floor, each elevation, and sections of every storey, floor and roof of the building upon which shall be shown, so far as this is necessary to show that the building complies with these By-laws—

- (a) the level of the site of the building, the level of the lowest floor of the building, and the level of any street adjoining the premises in relation to one another and in relation to some known datum;
- (b) the position of the damp-proof courses and any other barriers to moisture or termites, the position, form and dimensions of the foundations, walls, windows, floors, roofs, chimneys and the several parts of the building;
- (c) on one or more elevations the arrangement and layout of all soil ventilating, anti-syphonage and waste pipes and the fittings used in connexion therewith;
- (d) the dimensions, position and construction of staircases; and
- (e) the dimensions, position and construction of any refuse chute.

22. A block plan showing—

- (a) the size and position of the building and its relationship to adjoining buildings;
- (b) the position and width and layout of every street adjoining the premises;
- (c) the size and position of every garden, yard and open space on the plot;
- (d) the plot number and those of adjoining plots;
- (e) the position of any tree, shrub or other obstruction located in the highway bounding the plot which may be affected by the proposals;
- (f) any established, prescribed or proposed building lines; and
- (g) the north point.

23. A key plan showing the position of the site when it is not sufficiently identifiable from the block plan.

24. Particulars, so far as necessary to show that the building complies with these By-laws, of—

- (a) the class or nature of the building and whether or not it will be used wholly or in any part for human habitation, or for the habitual employment of persons in any manufacture, trade or business or wholly or predominately for purposes of storage;
- (b) the specific use of each and every part of the building;
- (c) the materials of which the building will be constructed;
- (d) the mode of drainage showing soil or combined drainage in red, surface water in blue and waste water in green; and
- (e) the means of water supply.

Part I—Notice of intention to erect, fix, place or post an advertisement

25. A detailed drawing of the advertisement to a scale of not less than 1 in. to every 2 ft. or to such other scale as the council may agree.

26. For advertisements attached to a building or other existing structure an elevation to a suitable scale not less than 1 in. to every 8 ft. showing the position of the advertisement.

27. For a free-standing advertisement a block plan showing the position in relationship to any buildings or boundaries of plots.

28. For all advertisements, a specification of materials and colours to be used and, if required by the council, drawings showing details of the construction including the size and position of any reinforcing members.

29. The plot reference numbers together with that of adjoining plot numbers shall be shown.

SECOND SCHEDULE

CALCULATION OF LOADING

Dead load.

1. For the purpose of calculating the dead load of a building or any part of a building—

- (a) the weights of materials shall be deemed to be those specified in British Standard 648 "Schedule of unit weights of building materials", in the case of materials therein mentioned, and in the case of other materials the weights shall be determined by test;

- (b) where the position of partitions is shown on the plans furnished to the council, their weights shall be included in the dead load; and
- (c) where it is intended to erect partitions which are not shown on the plans, the beams, and the floor slabs when they are capable of distributing the load effectively over the area of the floor, shall be designed to carry, in addition to other loads, a uniformly distributed load per square foot of not less than 10 per cent of the weight per foot run of the finished partitions:

Provided that if the floor is used for office purposes the design shall be based on a load so calculated, or on a load of twenty pounds per sq. ft., whichever is the greater.

2. (1) The imposed loads on slabs, beams, columns, piers, walls and structural frames, due to floor loads, shall be ascertained in accordance with the provisions of this rule.

Imposed loading due to floor loads.

(2) Subject to the provisions of rule 3 of this Schedule, the minimum imposed loads per sq. ft. on each floor shall be those specified in column (3) of the Table set out below opposite the description of the floor:

Provided that in the case of slabs and beams not being cantilever slabs and beams, the loads specified in column (4) in the case of slabs and in column (5) in the case of beams shall be taken instead of those in column (3) if they cause higher stresses.

(3) Where it is known that the imposed loads will exceed the loads calculated in accordance with rule 1 of this Schedule, such higher loads shall be adopted in the design.

(4) Stairs, landings and cantilever balconies shall be designed for the following imposed loads (including horizontal loads) according to the class of floor (as specified in the Table set out below) in connexion with which they are used—

- (a) for class 1—thirty pounds per sq. ft.;
- (b) for classes 2, 3 or 4—sixty pounds per sq. ft.; and
- (c) for classes 5, 6, 7 or 8—one hundred pounds per sq. ft.

TABLE

In this Table a reference to a floor includes a reference to any part of that floor to be used as a corridor, and the expression "slabs" includes boarding and beams or ribs spaced not farther than three feet apart between centres, and the expression "beams" means all other beams or ribs.

The expression "fixed seating" means seating which is securely fixed to the floor on which it rests, and which is unlikely to be moved.

<i>Floor</i>		<i>Minimum Imposed Loads</i>		
<i>Class</i>	<i>Description</i>	<i>Lb. per sq. ft. of floor area</i>	<i>Slabs uniformly distributed over span of the slab</i>	<i>Beams uniformly distributed over span of the beam</i>
(1)	(2)	(3)	(4)	(5)
1.	Floors in dwelling houses of not more than two storeys designed for one occupation	30	240	1,920
2.	Floors (other than those of Class 1) for residential purposes, including tenements, hospital wards, bedrooms and private sitting rooms in hotels and dormitories	40	320	2,560
3.	Office floors above the entrance floor; floors of light workrooms without storage	50	40	3,200
4.	Banking halls; office entrance floors and office floors below entrance floor and floors of classrooms in schools	60	480	3,840
5.	Floors for the display and sale of merchandise; workrooms generally; garages for vehicles not exceeding $2\frac{1}{2}$ tons gross weight; places of assembly with fixed seating; churches and chapels; restaurants and circulation space in machinery halls, power stations, etc.; where not occupied by plant or equipment	80	640	5,120
6.	Floors of warehouses, workshops, factories and similar buildings or parts of buildings for light-weight loads; office floors for storage and filing purposes and places of assembly without fixed seating including public rooms in hotels; dance halls, etc.	100	800	6,400
7.	Floors of warehouses, workshops, factories and similar buildings or parts of buildings for medium-weight loads; floors of garages for vehicles not exceeding 4 tons gross weight	150	For garage floors only one and a half times the maximum wheel load but not less than 2,000 pounds deemed to be distributed over a floor area measured 2 ft. 6 in. in each direction.	
8.	Floors of warehouses, workshops, factories and similar buildings or parts of buildings for heavy weight loads; floors of book stores and stationery stores	200	—	

3. (1) In the design of columns, piers or walls supporting two or more floors in any building other than a warehouse, garage or a building intended to be used wholly or predominantly for storage, the total imposed floor loads as calculated in pursuance of paragraph (2) of rule 2 of this Schedule may be reduced by the percentage specified in column (2) of the table set out below opposite to the number of floors supported as specified in column (1):

Provided that for a factory or a workshop the minimum total imposed floor load for any column, pier or wall shall be not less than the equivalent of 100 lb. per sq. ft. on all floors supported.

(2) Where a single span of a beam supports not less than 500 sq. ft. of floor at one general level and the floor is not to be used for storage purposes, the imposed load as calculated aforesaid for the design of the beam may be reduced by 5 per cent for each 500 sq. ft. supported, subject to a maximum reduction of 25 per cent. A like reduction, or that given in the table set out above, but not both, may be taken into account in the design of any column, pier or wall supporting such a beam or girder.

(3) Any load specifically allowed for plant or machinery shall not be reduced in pursuance of this rule.

Reduction in imposed floor loads.

TABLE

<i>Number of floors supported</i>	<i>Percentage reduction</i>
(1)	(2)
2	10
3	20
4	30
5 or more	40

4. In addition to the wind and dead load of any roof or cantilever the following imposed loads shall be allowed for the design of roofs—

Imposed loads on roofs.

(a) flat roofs and slightly sloping roofs up to and including 10 degrees—

(i) on roofs where access is provided a superimposed load of 30 lb. per sq. ft. shall be taken subject to a minimum load of 240 lb. uniformly distributed over any foot-width of a roof and 1,920 lb. uniformly distributed over the span in the case of all beams;

(ii) on roofs where no access is provided (other than for maintenance) an imposed load of 5 lb. per sq. ft. shall be taken;

(b) sloping roofs having a slope greater than 10 degrees—

(i) on a roof of reinforced concrete where no access is provided to the roof (other than for maintenance) an imposed load of 5 lb. per sq. ft. shall be taken;

- (ii) on a framed roof of steel, timber or other approved material having a slope greater than 10 degrees and up to 65 degrees, an imposed load of 5 lb. per sq. ft. shall be taken and on such roofs having a slope over 65 degrees no imposed load need be taken;
- (c) cantilever roofs, sun hoods and canopies—
 - (i) cantilever roofs shall be designed for the appropriate roof loading as laid down in this rule;
 - (ii) inaccessible sun hoods over windows or other openings shall be designed for an imposed load of 5 lb. per sq. ft.;
 - (iii) canopies shall be designed for an imposed load of 15 lb per sq. ft.;
- (d) all roofs—

roof coverings (other than glass) and purlins shall be capable of carrying a minimum load of 200 lb. concentrated on an area of 5 in. sq. at any point, except that where the roof slope exceeds 45 degrees a concentrated load of 100 lb. shall be provided for:

Provided that where it is known that the imposed loads specified in this rule will be exceeded such greater loads shall be used in the design of the roof.

Wind loading.

5. Wind loading on a building shall be calculated on the basis of the recommendations of British Standard Code of Practice CP.3, Code of Functional Requirements of Buildings, Chapter V, Loading. The grade of exposure shall be as laid down by the council.

Eccentric loading of foundations.

6. (1) Where eccentric loading of foundations to walls occurs the wall shall be so designed that the resulting force shall pass through the middle third of the foundations.

(2) The theoretical line of the force in a wall should not normally incline more than 1 in 6 from the vertical. If this line of force inclines at more than 1 in 6 special provisions will be required to stabilize the loading on to the foundations.

Cantilevers—resistance to overturning.

7. Where a cantilever or the like projects from a wall of a building due provision must be made for stability. The resistance to overturning must be at least 50 per cent greater than the force tending to overturn.

THIRD SCHEDULE

WALLS OF STONE, BRICKS OR BLOCKS—RULES TO SATISFY REQUIREMENTS AS TO STABILITY AND FIRE RESISTANCE

Interpretation and application.

1. (1) In this Schedule the following expressions have the meaning assigned to them—

“base” in relation to a wall, means the underside of that part of the wall which immediately rests upon the footings or foundations or other structure by which the wall is carried;

“dividing wall” means a wall which is required to be taken into account in pursuance of rule 5 of this Schedule in deeming another wall to be divided into distinct lengths.

(2) The rules in this Schedule relate to external walls, party walls, certain internal load-bearing walls, and to dividing walls (whether load-bearing or not) which are constructed of stone, bricks or blocks

2. Any load imposed upon a wall to which this Schedule relates shall be properly distributed.	Loading.
3. (1) Bricks or blocks used in any wall to which the Rules in this Schedule (except rule 11) relate shall be composed of burnt clay, stone, concrete or sandlime and have a resistance to crushing of not less than—	Strength of bricks, stone and blocks.
(a) 400 lb. per sq. in. of gross horizontal area where the wall is a wall of a small house as defined in by-law 71 of these By-laws or of a building of the same description divided into flats; or	
(b) 1,500 lb. per sq. in. if the bricks or blocks are solid, or 750 lb. per sq. in. of gross horizontal area if the bricks or blocks are hollow, where a wall is a wall of any building other than one to which subparagraph (a) of this paragraph applies or other than one exceeding three storeys in height; or	
(c) 3,000 lb. per sq. in. of gross horizontal area where the wall is a wall of any building exceeding three storeys in height.	
(2) The solid material in the bricks or blocks to which this rule relates shall be not less in volume than one-half the total volume of the brick or block, and shall be so disposed that the aggregate width (measured horizontally at right angles to the face of the brick or block as laid) is nowhere less than one-third of the width of the brick or block.	
4. (1) For the purpose of determining the thickness of a wall in pursuance of this Schedule the height of storeys and the height of walls shall be measured in accordance with paragraphs (2) and (3) of this rule.	Rules for measuring height of storeys and height of walls
(2) The height of the lowest or only storey shall be measured from the base of the wall, and the height of any other storey shall be measured from the level of the underside of the floor-structure of the storey to the level of the underside of the floor-structure next above it or, if there is no such storey, then to the highest part of the wall, or, in a storey comprising a gable, to half the height of the gable.	
(3) The height of a party wall comprising a gable shall be measured from its base to the base of the gable, the height of any other wall comprising a gable shall be measured from its base to half the height of the gable; and the height of any wall not comprising a gable shall be measured from its base to its highest part excluding any parapet which does not exceed 4 ft. in height.	
5. (1) For the purpose of determining the thickness of a wall in pursuance of this Schedule the length of the wall shall be measured in accordance with paragraphs (2) and (3) of this rule.	Rules for measuring length of walls.
(2) Walls shall be deemed to be divided into distinct lengths by piers, buttresses, chimneys or dividing walls, of the type herein-after specified:—	
(a) A pier or buttress which—	
(i) extends upwards from the base of the wall to within a distance from the top of the wall equal to three times the least thickness of the wall;	

- (ii) is at any height not less in thickness (measured so as to include the wall) than three times the thickness of the wall; and
 - (iii) is not less in breadth than half the thickness of the wall and in no case is less than 4 in.
- (b) A chimney which has a horizontal sectional area excluding any fireplace opening or flue, of not less than the area required for a pier or buttress, and an overall thickness of not less than twice the thickness of the wall it is deemed to divide.
- (c) A dividing wall, i.e. a wall which affords lateral support to the wall it is deemed to divide and complies with the following provisions—
- (i) it shall be bonded or otherwise securely tied to the wall it is deemed to divide;
 - (ii) it shall, if it is an internal load-bearing wall, comply with the requirements of rule 8 of these Rules, and in any other case it shall, except where it forms part of a chimney constructed in accordance with the by-laws relating to chimneys, be of a thickness of at least one-half of that prescribed by rule 6 or rule 7 of this Schedule in respect of the wall which it is deemed to divide but shall in no case be less than 4 in. thick:
- Provided that, where the building is intended to be used as a house, and the wall which is deemed to be divided does not as a whole exceed 20 ft. in height and 35 ft. in length, the dividing wall may be not less than 3 in. thick;
- (iii) no opening or recess other than an opening not exceeding 6 sq. ft. in area shall be made in a dividing wall within a distance equivalent to two-and-a-half times the thickness of the wall, and in no case less than 22 in. from the wall it is deemed to divide.

(3) All measurements of length of wall shall be made from the centre of the return walls, dividing walls, piers, buttresses or chimneys.

Thickness of
external and
party walls
(domestic
buildings).

6. (1) Subject to the provisions of paragraphs (2) and (3) of this rule and of rules 9 to 15 of this Schedule, the thickness of every external wall and every party wall in a domestic building shall be not less than that specified in column (3) of the table set out below, set opposite the particulars in columns (1) and (2) of the table specifying the height and length of the wall.

(2) Where such a wall exceeds 60 ft. in height and 45 ft. in length, the thickness respectively specified in the table set out below for walls exceeding 60 ft. in height, but not exceeding 45 ft. in length, shall apply as if those thicknesses were, in all storeys except the topmost two storeys, increased by $4\frac{1}{2}$ in.:

Provided that, the requirements of this paragraph shall be deemed to be complied with if properly distributed lengths of that wall, of an aggregate length of not less than one-quarter of the length of that wall, are so increased in thickness.

(3) The thickness of the wall in any storey shall be not less than one-sixteenth part of the height of that storey, and the thickness of the wall beneath that storey shall be not less than the thickness of the wall in that storey:

Provided that, where properly-distributed lengths of the wall in that storey and of the wall beneath that storey, of an aggregate length respectively of not less than one-quarter of the respective lengths of those walls, are of the thickness required by this paragraph, the requirements of this paragraph shall be deemed to be complied with.

TABLE

<i>Height of wall (1)</i>	<i>Length of Wall (2)</i>	<i>Thickness of Wall (3)</i>
Not exceeding 12 ft.	Whatever the length	8½ in. for the whole of its height.
Exceeding 12 ft. but not exceeding 30 ft.	Not exceeding 30 ft.	8½ in. for the whole of its height.
	Exceeding 30 ft.	13 in. from the base for the height of one storey, and 8½ in. for the rest of its height.
Exceeding 30 ft. but not exceeding 40 ft.	Not exceeding 30 ft.	13 in. from the base for the height of one storey, and 8½ in. for the rest of its height.
	Exceeding 30 ft.	13 in. from the base for the height of two storeys, and 8½ in. for the rest of its height.
Exceeding 40 ft. but not exceeding 50 ft.	Not exceeding 35 ft.	17½ in. from the base for the height of one storey, 13 in. for the height of the next two storeys, and 8½ in. for the rest of its height.
	Exceeding 35 ft. but not exceeding 45 ft.	17½ in. from the base for the height of two storeys, and (a) if the wall does not reach to the topmost storey, 13 in. for the rest of its height; (b) if the wall reaches to the topmost storey, then 13 in. for the rest of its height below that storey and 8½ in. for that storey.
	Exceeding 45 ft.	17½ in. from the base for the height of two storeys, and 13 in. for the rest of its height.

<i>Height of wall (1)</i>	<i>Length of Wall (2)</i>	<i>Thickness of Wall (3)</i>
Exceeding 50 ft. but not exceeding 60 ft.	Not exceeding 35 ft.	17½ in. from the base for the height of two storeys, and (a) if the wall does not reach to the topmost storey, 13 in. for the rest of its height; (b) if the wall reaches to the top-most storey, then 13 in. for the rest of the height below that storey and 8½ in. for that storey.
	Exceeding 35 ft. but not exceeding 45 ft.	17½ in. from the base for the height of two storeys, and 13 in. for the rest of its height.
	Exceeding 45 ft.	21½ in. from the base for the height of one storey, 17½ in. for the height of the next two storeys, and 13 in. for the rest of its height.
Exceeding 60 ft. but not exceeding 70 ft.	Not exceeding 45 ft.	21½ in. from the base for the height of one storey, 17½ in. for the height of the next two storeys, and 13 in. for the rest of its height.
Exceeding 70 ft. but not exceeding 80 ft.	Not exceeding 45 ft.	21½ in. from the base for the height of one storey, 17½ in. for the height of the next three storeys, and 13 in. for the rest of its height.
Exceeding 80 ft. but not exceeding 90 ft.	Not exceeding 45 ft.	26 in. from the base for the height of one storey, 21½ in. for the height of the next storey, 17½ in. for the height of the next three storeys, and 13 in. for the rest of its height.
Exceeding 90 ft. but not exceeding 100 ft.	Not exceeding 45 ft.	26 in. from the base for the height of one storey, 21½ in. for the height of the next storey, 17½ in. for the height of the next three storeys, and 13 in. for the rest of its height.
Exceeding 100 ft. but not exceeding 120 ft.	Not exceeding 45 ft.	30 in. from the base for the height of one storey, 26 in. for the height of the next two storeys, 21½ in. for the height of the next two storeys, 17½ in. for the height of the next three storeys, and 13 in. for the rest of its height.

7. (1) Subject to the provisions of paragraphs (2), (3), (4), (5) and (6) of this rule and of the rules 9 to 15 of this Schedule, every external wall and every party wall in a public building or building of the warehouse class shall have a thickness at the top and for 16 ft. below the top of not less than 13 in.

Thickness of
external and
party walls
(public
buildings and
buildings of
the warehouse
class).

Provided that in a building of the warehouse class—

(a) a wall only one storey in height; or

(b) the topmost storey of a wall where that wall does not exceed 30 ft. in height may be of any thickness not less than 8½ in.

(2) Every such wall being of the height and length specified in the table set out below shall have a thickness at the base of not less than that specified for such height and length in that table.

(3) The thickness of the intermediate parts of the wall between the base and 16 ft. below the top shall be of not less thickness than that obtained if the wall were to be built solid throughout the space between straight lines drawn on each side of the wall and joining the thickness at the base to the thickness at 16 ft. below the top.

(4) Offsets shall not be made in a wall between the base and the top thereof, except at the level of lateral supports.

(5) Where the wall exceeds 60 ft. in height and 45 ft. in length, the thickness respectively specified in the table set out below for the walls exceeding 60 ft. in height, but not exceeding 45 ft. in length, shall apply as if those thicknesses were, from the base to 16 ft. below the top, increased by 4½ in.

Provided that, the requirements of this paragraph shall be deemed to be complied with if properly distributed lengths of the wall, of an aggregate length of not less than one-quarter of the length of that wall, are so increased in thickness.

(6) The thickness of the wall in any storey shall be not less than one-fourteenth part of the height of that storey and the thickness of the wall beneath the storey shall not be less than the thickness of the wall in that storey:

Provided that, where properly distributed, lengths of the wall in that storey and of the wall beneath that storey of an aggregate length respectively of not less than one-quarter of the respective lengths of those walls, are of the thickness required by this paragraph the provisions of this paragraph shall be deemed to be complied with.

TABLE

<i>Height of Wall (1)</i>	<i>Length of Wall (2)</i>	<i>Thickness (3)</i>
Not exceeding 25 ft.	Whatever the length	13 in.
Exceeding 25 ft. but not exceeding 30 ft.	Not exceeding 45 ft.	13 in.
	Exceeding 45 ft.	17½ in.
Exceeding 30 ft. but not exceeding 40 ft.	Not exceeding 35 ft.	13 in.
	Exceeding 35 ft. but not exceeding 45 ft.	17½ in.
	Exceeding 45 ft.	21½ in.
Exceeding 40 ft. but not exceeding 50 ft.	Not exceeding 35 ft.	17½ in.
	Exceeding 35 ft.	21½ in.
Exceeding 50 ft. but not exceeding 60 ft.	Not exceeding 45 ft.	21½ in.
	Exceeding 45 ft.	26 in.
Exceeding 60 ft. but not exceeding 80 ft.	Not exceeding 45 ft.	21½ in.
Exceeding 80 ft. but not exceeding 100 ft.	Not exceeding 45 ft.	26 in.
Exceeding 100 ft. but not exceeding 120 ft.	Not exceeding 45 ft.	30 in.

Thickness of internal load-bearing walls.

8. Every internal load-bearing wall (not being a party wall, or a wall within a dwelling of less than three storeys) shall have a thickness not less than half that required in pursuance of rule 6 or rule 7 of this Schedule as the case may be, for an external or party wall of the same height but twice the length.

Thickness of walls of pier construction.

9. Subject to the provisions of rule 12 of these Rules if an external wall or a party wall is built with piers distributed throughout its length and with a pier at each end, the mean thickness of the wall, i.e. the horizontal sectional area of the wall and piers divided by the length of the wall, shall not be less than the thickness required by rules 6, 7 or 8 of this Schedule as the case may be, and the thickness of the wall between the piers shall be not less than 8½ in.

Cavity walls.

10. (1) The provisions of this rule relate to walls which are constructed of bricks, stone or blocks complying with the provisions of rule 3 of this Schedule, properly bonded and put together with mortar as cavity walls of two leaves.

(2) The leaves shall be securely tied together with ties complying with British Standard 1243 "Metal Wall Ties" or with other not less suitable ties, the ties being placed at distances apart not exceeding 3 ft. horizontally and 18 in. vertically.

(3) The cavity shall be not less than 2 in. nor more than 3 in. in width throughout.

(4) The leaves shall be each not less than 4 in. thick throughout:

Provided that a wall of the following description may consist of leaves not less than 3 in. thick, that is to say a wall not exceeding

in length 25 ft., and in height 20 ft., or, if the wall is a gable wall, 25 ft.

(a) having all courses of less height than 6 in. put together with mortar which shall be—

(i) cement mortar composed of cement and fine aggregate in the proportion of one part of cement to not less than four or more than six parts of fine aggregate measured by volume of the materials when dry:

Provided that if ordinary Portland cement, rapid-hardening Portland cement is used, a proportion of lime, not exceeding twenty-five per cent of the volume of cement may be added to the cement mortar; or

(ii) cement-lime mortar composed of ordinary Portland cement, rapid-hardening Portland cement or blast furnace Portland cement and calcium (either non-hydraulic or semi-hydraulic) lime and fine aggregate in the proportion of one part of cement, one part of lime and not less than five or more than six parts of fine aggregate; or

(b) having not less than twice the number of ties required by paragraph (2) of this rule.

(5) The overall thickness of the wall (not being a wall to which the proviso of paragraph (4) of this rule applies) shall be not less than the following thickness, that is to say—

(a) the thickness resulting from the application of paragraphs (3) and (4) of this rule, or

(b) the thickness that would be required for a solid wall in pursuance of rules 6 and 7 or rule 8 of this Schedule, as the case may be increased by the width of the cavity, whichever is the greater.

11. (1) The provisions of this rule relate to walls built of stone or flints, clunches of bricks or other burnt or vitrified material, jointed in mortar and not laid in horizontal beds or courses.

Walls of stone,
flints, clunches
of bricks.

(2) The thickness of the wall shall be not less than one and one-third the thickness that would be required according to rules 6 and 7 or rule 8 of this Schedule, as the case may be, if the wall were a bonded wall of bricks, stone or blocks.

12. The external walls of—

(a) a building of not more than one storey in height (not being a house) whose width, measured in the direction of the span of the roof, does not exceed 30 ft. and the height of whose walls does not exceed 10 ft., or

External walls
of certain small
buildings and
annexes.

(b) a verandah, loggia, garage, greenhouse, tool shed, fuel store, water-closet, lavatory, or wash-house which does not exceed 10 ft. in height and is attached to the house;

may be not less than 4 in. in thickness subject to the following conditions—

(i) that any wall which exceeds 8 ft. either in the height or length shall be bonded into piers not less than $8\frac{1}{2}$ in. square in horizontal section, or if piers of greater size would be required to give adequate stability, of the greater size;

- (ii) that where the piers are required to be provided by the last preceding condition such a pier shall be provided at each end of the wall;
- (iii) that if the wall exceeds 10 ft. in length, further similar piers shall be provided so to divide the wall that the length of each portion of the wall measured in the clear between such piers shall not exceed 10 ft.;
- (iv) that the wall is put together with one of the mortars specified in the proviso to paragraph (4) of rule 10 of this Schedule;
- (v) that the roof be so constructed that the walls are not subject to any thrust therefrom; and
- (vi) that no load other than the distributed load of a roof be borne on the walls.

Walls of small outbuildings.

13. A wall of an outbuilding not communicating directly with the building to which it is appurtenant may be not less than 4 in. thick if it does not exceed 9 ft. in height and 10 ft. in length and is properly put together with one of the mortars specified in the proviso to paragraph (4) of rule 10 of this Schedule.

Bays and gables.

14. The provisions of rule 6 or rule 7 of this Schedule shall not apply to any part of an external wall which is constructed as a bay for a bay window or as a gable and is put together with one of the mortars specified in the proviso to paragraph (4) of rule 10 of this Schedule and is, as the case may be, above the level of the sill of the lowest window opening in such bay, or above the level of the ceiling of the topmost storey in that part of the building.

Parapets.

15. The thickness of any parapet to an external wall shall be not less than $8\frac{1}{2}$ in., or the thickness of the wall on which it is carried, whichever is the less; and its height shall not exceed six times its thickness.

Openings and recesses.

16. (1) The distance between any part of an opening or recess made in an external wall and the outer face of a return external wall, shall be not less than one and a half times the thickness of the wall in which the opening or recess is made, unless adequate support at the corner is provided by other means.

(2) Adequate means of supporting the superstructure shall be provided over every opening and recess in an external wall or party wall

(3) The number, size or position of openings or recesses on a wall shall not be such as to impair the stability of the wall or any part of it.

Chases

17. Except as otherwise provided for in these By-laws—

- (a) no vertical chase shall be formed in any wall of a greater depth than one-third of the thickness of the wall, or if the wall is a cavity wall, of that leaf of the wall in which the chase is formed;
- (b) no horizontal chase shall be formed in any wall of a greater depth than one-sixth of the thickness of the wall or, if the wall is a cavity wall, of that leaf of the wall in which the case is formed.

Overhanging not to impair stability

18. The extent to which any part of a wall overhangs a part below it shall not be such as to impair the stability of the wall or any part of it.

FOURTH SCHEDULE

PROVISIONS PRESCRIBING NOTATIONAL PERIODS OF FIRE RESISTANCE FOR VARIOUS TYPES OF CONSTRUCTION

TABLE A (1)
WALLS AND PARTITIONS

In this Table:—

Class 1 Aggregate means formed slag, pumice, blast furnace slag, crushed brick and burnt clay products, including expanded clay, well burned clinker, crushed lime-stone.

Class 2 Aggregate means flint, gravel, granite and all crushed natural stones other than limestone.

Construction	<i>Minimum thickness in inches (excluding plaster) for period of hours</i>				
	6 hrs.	4 hrs.	2 hrs.	1 hr.	$\frac{1}{2}$ hr.
SOLID CONSTRUCTION—					
Stone, bonded and coursed; bricks of clay, concrete or sand lime: No plaster	8½	8½*	8½†	4	4
Concrete blocks:					
Class 1 Aggregate:					
No plaster	4	3	2½		
Plastered at least $\frac{1}{2}$ in. thick on each side	4	2½	2		
Class 2 Aggregate:					
No plaster	4	4	3		
Plastered at least $\frac{1}{2}$ in. thick on each side	4	3	2		
Gypsum blocks:					
No plaster	4	3	2		
Plastered at least $\frac{1}{2}$ in. thick on each side	3	2	2		
Wood wool slabs:					
Plastered at least $\frac{1}{2}$ in. thick on each side	3	2	2		
Reinforced concrete:					
Aggregate with reinforcement (in two layers in walls over 5 in. in thickness) in two directions spaced not further apart than 6 in. centres, the volume of which is not less than 0·2 per cent of the volume of the concrete, with minimum concrete cover of 1 in.	9	7	4	3	3
Plaster board:					
Supported at top and bottom edges in steel channels and plastered on each side at least five-eighths inches thickness with gypsum plaster				¾	
Glass bricks:					
In panels not exceeding 40 sq. feet in area with expansion joints not less than 1/10 in. per foot width of the panel at each side of the panel, and not less than 1/10 in. per foot of the height of the panel at the top of the panel				4	

*Where plastered at least $\frac{1}{2}$ in. thick on each side with gypsum/vermiculite plaster not leaner than 1 : 2 and where the wall does not exceed 10 ft. either in height or length, the thickness for this period may be 4 in.

†Where plastered at least $\frac{1}{2}$ in. thick on each side and where the wall does not exceed 10 ft. either in height or length, the thickness for this period may be 4 in.

Construction	Minimum thickness in inches (excluding plaster) for period of hours			
	6 hrs.	4 hrs.	2 hrs.	1 hr.

HOLLOW BLOCK CONSTRUCTION—

Clay Blocks:

Plastered at least $\frac{1}{2}$ in. thick on each side and shells not less than $\frac{3}{8}$ in. thick:

1 cell in each block and each block not less than 50 per cent solid	4	3
1 cell in each block and each block not less than 30 per cent solid	6	
2 cells in each block and each block not less than 50 per cent solid	8 $\frac{1}{2}$	4
2 cells in each block and each block not less than 30 per cent solid	6	

Concrete blocks:

Plastered at least $\frac{1}{2}$ in. thick on each side and 1 cell in wall thickness:

Class 1 Aggregate	8 $\frac{3}{4}$	4 $\frac{1}{2}$	3	2 $\frac{1}{2}$
Class 2 Aggregate	8 $\frac{3}{4}$	8 $\frac{3}{4}$	3	3

Gypsum blocks:

Not less than 70 per cent solid:

No plaster	3	2	2
Plastered at least $\frac{1}{2}$ in. thick on each side	3	2	2

TABLE A (2)

Hollow stud partitions

Construction	Minimum thickness of plaster in inches on each face for period of hours			
	4 hrs.	2 hrs.	1 hr.	$\frac{1}{2}$ hr.

STEEL OR TIMBER STUDDING—

Plaster on metal or timber lathing:

Portland cement plaster, Portland cement lime plaster or gypsum plaster	$\frac{3}{8}$	$\frac{1}{2}$
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Plaster board with or without gypsum plaster:

$\frac{3}{8}$ in. thick plaster board on each side	3/16 (Neat single coat)	
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$\frac{3}{8}$ in. thick perforated plaster board on each side	$\frac{1}{2}$
Two $\frac{3}{8}$ in. thick plaster boards on each side	Nil
$\frac{1}{2}$ in. thick plaster board on each side	$\frac{3}{8}$
$\frac{3}{8}$ in. thick plaster board on each side	Nil

TABLE B

Floors

<i>Construction</i>	<i>Minimum thickness in inches for period of</i>				
	<i>4 hrs.</i>	<i>2 hrs.</i>	<i>1 hr.</i>	<i>½ hr. for small houses (by-law (75))</i>	<i>Periods specified</i>
FILLER JOIST CONSTRUCTION—					
Thickness of concrete	6	5	3	$3\frac{1}{2}$	
Concrete cover on bottom of joist	3	1	$\frac{1}{2}$	$\frac{1}{2}$	
SOLID REINFORCED CONCRETE CONSTRUCTION—					
(Including flat slab construction and floors constructed of pre-cast inverted "U" channel or T-sections, without a ceiling or soffit):					
Thickness of concrete	6		4	$3\frac{1}{2}$	
Concrete cover to reinforcement	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	
HOLLOW BLOCK FLOOR CONSTRUCTION—					
(Including floors constructed of precast concrete units of box-section or I-section):					
Aggregate thickness of non-combustible material (excluding ceiling finishes (if any))	5	$3\frac{1}{2}$	3	$2\frac{1}{2}$	
Concrete cover to reinforcement	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	
STRUCTURAL TIMBER CONSTRUCTION					
(a) Plain edge boarding on timber joists not less than $1\frac{1}{2}$ in. wide with ceiling of:					
(i) Timber lath and plaster—					
Thickness of plaster					$\frac{5}{8}$
(ii) Timber lath and plaster with plaster of minimum thickness of $5/8$ in. covered on underside with plaster board of thickness					
			$\frac{1}{2}$		
(iii) Metal lath and plaster—					
Thickness of plaster			$\frac{3}{8}$		
(iv) One layer of plaster-board of thickness					
				$\frac{1}{2}$	
(v) One layer of plaster-board of minimum thickness of $\frac{3}{8}$ in. finished with gypsum plaster of thickness					
				$\frac{1}{2}$	
(vi) One layer of plaster-board of minimum thickness of $\frac{1}{2}$ in. finished with gypsum plaster of thickness					
				$\frac{1}{2}$	
(vii) Two layers of plaster-board of total thickness					
				$\frac{3}{4}$	
(viii) One layer of insulating board of minimum thickness of $\frac{1}{2}$ in. finished with gypsum plaster of thickness					
				$\frac{1}{2}$	
(ix) Wood-wool slab 1 in. thick finished with gypsum plaster of thickness					
				3/16	
(b) Tongued and grooved boarding not less than $\frac{3}{8}$ in. (nominal) thickness on timber joists not less than $1\frac{1}{2}$ in. wide with ceiling of:					
(i) Timber lath and plaster—					
Thickness of plaster					$\frac{5}{8}$

TABLE B—(Contd.)

<i>Construction</i>	<i>Minimum thickness in inches for period of</i>			
	<i>4 hrs.</i>	<i>2 hrs.</i>	<i>1 hr.</i>	<i>Periods specified 1/2 hr. for small houses (by-law (75))</i>
(ii) Timber lath and plaster with plaster of minimum thickness of $\frac{1}{8}$ in. covered on underside with plaster-board of thickness			$\frac{3}{8}$	
(iii) Metal lath and plaster— Thickness of plaster			$\frac{5}{8}$	
(iv) One layer of plaster-board of thickness				$\frac{3}{8}$
(v) One layer of plaster-board of minimum thickness of $\frac{1}{4}$ in. finished with gypsum plaster of thickness ..			3/16	
(vi) Two layers of plaster-board of total thickness			7/8	
(vii) One layer of insulating board of minimum thickness of $\frac{1}{2}$ in. finished with gypsum plaster of thickness ..			3/16	
(viii) Wood-wool slab 1 in. thick finished with gypsum plaster of thickness ..			3/16	
(c) Tongued and grooved boarding not less than 1 in. (nominal) thickness on timber joists not less than 7 in. deep by 2 in. wide with ceiling of:				
(i) Timber lath and plaster thickness of plaster			$\frac{5}{8}$	
(ii) Metal lath and plaster thickness of plaster			$\frac{5}{8}$	
(iii) One layer of plaster-board of thickness			$\frac{3}{8}$	
(iv) One layer of plaster board of minimum thickness of $\frac{1}{8}$ in. finished .. with gypsum plaster of thickness ..			$\frac{1}{2}$	
(v) One layer of plaster-board of minimum thickness of $\frac{1}{4}$ in. finished with gypsum plaster of thickness ..			3/16	
(vi) Two layers of plaster board of total thickness			$\frac{3}{4}$	
(vii) One layer of insulating board of thickness			$\frac{1}{2}$	
(viii) One layer of insulating board of minimum thickness of $\frac{1}{2}$ in. finished with gypsum plaster of thickness ..			$\frac{1}{2}$	
(ix) Wood-wool slab 1 in. thick finished with gypsum plaster of thickness ..			3/16	

TABLE C
STEEL COLUMNS AND BEAMS

In this Table:—

SOLID PROTECTION means casing which is bedded close up to the steel without any intervening cavities and with all joints in that casing made full and solid.

HOLLOW PROTECTION means that there is a void between the protective material and the steel. All hollow protection to columns shall be effectively sealed at each floor level.

REINFORCEMENT. Where reinforcement is required in this Table, that reinforcement shall consist of steel binding wire not less than No. 13 S.W.G. in thickness, or a steel mesh weighing not less than 1 lb. per sq. yard. In concrete protection the spacing of that reinforcement shall not exceed 12 inches in any direction.

<i>Construction</i>	<i>Minimum thickness of protection in inches for period of hours</i>				
	<i>4 hrs.</i>	<i>2 hrs.</i>	<i>1 hr.</i>	<i>½ hr.</i>	
SOLID PROTECTION—					
Columns:					
Reinforced concrete	$2\frac{1}{2}^*$	2^*	$\frac{1}{2}$	$\frac{1}{2}$	
Solid bricks of burnt clay or sand lime	3	2	2	2	
Solid blocks reinforced in every horizontal joint:					
(i) Foamed slag or pumice concrete	$2\frac{1}{2}$	2	2	2	
(ii) Gypsum blocks	2	2	2	2	
Sprayed asbestos	2	1	$\frac{1}{2}$	$\frac{1}{2}$	
Beams:					
Reinforced concrete	$2\frac{1}{2}\dagger$	$2\dagger$	$\frac{1}{2}$	$\frac{1}{2}$	
Sprayed asbestos	2	1	$\frac{1}{2}$	$\frac{1}{2}$	
HOLLOW PROTECTION—					
Columns:					
Solid bricks or burnt clay or sand lime reinforced in every horizontal joint	$4\frac{1}{2}$	3	2	2	
Solid bricks of foamed slag or pumice concrete or gypsum reinforced in every horizontal joint	3	2	2	2	
Moulded asbestos bound in position with nicrome wire not less than No. 16 S.W.G. in thickness, the wires to be sunk not less than $\frac{1}{2}$ in. deep in the outer surface of the asbestos and the grooves and all joints in the asbestos to be filled with refractory cement	$2\frac{1}{2}$	$1\frac{1}{2}$	1	1	
Portland cement plaster or Portland cement-lime plaster on metal lathing					$\frac{3}{4}$
Portland cement plaster or Portland cement-lime plaster on metal lathing with reinforcement over rendering coat					$\frac{1}{2}$
Gypsum plaster on metal lathing					$\frac{1}{2}$
Gypsum plaster on $\frac{3}{8}$ in. gypsum plaster board with No. 16 S.W.G. wire binding at 4 in. pitch.					$\frac{1}{2}$
Gypsum plaster on $\frac{3}{8}$ in. gypsum plaster board with No. 16 S.W.G. wire binding at 4 in. pitch					$\frac{1}{2}$
Two layers of metal lathing plastered with gypsum plaster on each layer, each					$\frac{3}{4}$
Precast concrete consisting of 4 volumes of vermiculite to 1 volume of Portland cement, reinforced with expanded metal, wire mesh or with No. 15 S.W.G. wire binding at 4 in. pitch.					1

TABLE C—(Contd.)

<i>Construction</i>	<i>Minimum thickness of protection in inches for period of hours</i>			
	<i>4 hrs.</i>	<i>2 hrs.</i>	<i>1 hr.</i>	<i>½ hr.</i>
Beams:				
Moulded asbestos bound in position with nicrome wire not less than No. 16 S.W.G. in thickness, the wires to be sunk in grooves not less than $\frac{1}{8}$ in. deep in the outer surface of the asbestos and the grooves and all joints in the asbestos to be filled with refractory cement	2½	1½	1	1
Portland cement plaster or Portland cement-lime plaster on metal lathing				$\frac{1}{4}$
Portland cement plaster or Portland cement lime plaster on metal lathing with reinforcement over the rendering coat				$\frac{1}{4}$
Gypsum plaster on metal lathing	$\frac{1}{8}$	$\frac{1}{8}$		
Gypsum plaster on $\frac{1}{8}$ in. gypsum plaster board with No. 16 S.W.G. wire binding at 4 in. pitch		$\frac{1}{8}$		
Gypsum plaster on $\frac{1}{8}$ in. gypsum board supported on wood battens				3/16 (neat single coat).
Gypsum plaster on $\frac{1}{4}$ in. gypsum plastered board with No. 16 S.W.G. wire binding at 4 in. pitch				
Precast concrete consisting of 4 volumes of vermiculite to 1 volume of Portland with expanded metal wire mesh or with No. 16 S.W.G. wire binding at 4 in. pitch			1	

*The thickness of protection or any projecting cleat, projecting rivet head and the like need not exceed 1 inch.

†The thickness of protection on the super surface of the upper flange of an internal mean, and on any projecting cleat, projecting rivet head and the like need not exceed 1 inch.

TABLE D
Reinforced concrete columns and beams

<i>Construction and materials</i>	<i>Minimum overall size of column inches for period of hours</i>			
	<i>4 hrs.</i>	<i>2 hrs.</i>	<i>1 hr.</i>	<i>½ hr.</i>
Reinforced concrete columns	18	12	8	6
Reinforced concrete columns with light 2 in. mesh reinforcement placed centrally in the concrete cover to longitudinal reinforcement	12	9		
<i>Minimum concrete cover to reinforcement in inches for period of hours</i>				
	<i>4 hrs.</i>	<i>2 hrs.</i>	<i>1 hr.</i>	<i>½ hr.</i>
Reinforced concrete beams	2½	2	1½	1

NOTE.—This table is not to be applied in the case of post- or pre-stressed concrete. Special approval of the council will be required in the case of this special form of construction.

FIFTH SCHEDULE

TILES AND ASBESTOS SLATES

For the types of roofs mentioned hereunder the requirements of by-laws 32, 96 and 97 of these By-laws will be satisfied if the following Rules are observed:—

Pitched Roofs of Tiles or Asbestos Slates

1. (1) *Pitch.*—(a) Plain tiles with double lap shall be laid to a pitch of not less than $32\frac{1}{2}$ degrees except that for Spanish or Italian half round tiles, the minimum pitch shall be not less than 18 degrees.

(b) Single lap tiles shall have a lap of not less than 25 degrees.

(2) *Lap.*—(a) Plain tiles shall have a lap of not less than $2\frac{1}{2}$ inches.

(b) Single lap tiles, where the head and the side lap are fixed in the design of the tile, shall be laid in accordance with the manufacturer's design, but where the head lap is not fixed it shall be not less than 3 inches.

(3) *Felt.*—Reinforced untearable roofing felt shall be fixed and used as an underfelt to all roofs where—

(a) plain tiles are used on roofs of less pitch than 35 degrees;

(b) single lap tiles are used on roofs of less pitch than 30 degrees;

(c) Spanish or Italian tiles are used on roofs of less pitch than 25 degrees.

Felt shall be finished at the eaves and verges so that any rain water which gains access thereto through the main roof covering discharges outside the building which it covers.

(4) *Battens.*—Where battens are supported at not greater centres than 24 in. they shall be—

(a) $\frac{3}{4}$ in. in thickness and $1\frac{1}{2}$ in. in breadth for plain tiles;

(b) $\frac{3}{4}$ in. in thickness and 2 in. in breadth for plain tiles used vertically, and

(c) 1 in. in thickness and 2 in. in breadth for single lap tiles not exceeding 17 in. in length.

(5) *Fixing.*—(a) Tiles shall be adequately secured to the roof to prevent slipping and properly tilted at the eaves to secure a proper bed for the overlapping tiles.

(b) Asbestos slates shall be fixed in accordance with the requirements of plain tiles, except that the minimum pitch shall be 20 degrees and a felt underlay shall be provided when the pitch is less than 35 degrees.

(6) *Flashings.*—Where flashings are required they shall be formed of metal, felt, tile or other approved material.

(7) *Generally.*—In every other respect the fixing and use of clay and concrete tiles, asbestos tiles and slates shall be carried out in accordance with the British Standard Code of Practice CP. 142 and the materials will satisfy the requirements of by-law 32 of these By-laws if they comply with the appropriate British Standard Specification.

Flat Roofs

2. (1) All flat roofs shall have a minimum fall of $1\frac{1}{2}$ in. in 10 ft., or be provided with other means which ensure the proper disposal of surface water.

(2) Concrete or hollow tile or similar roofs—

(a) shall be properly screeded and brought to a smooth trowel finish; and

(b) shall be covered with a minimum of two layers of built up roofing felt which complies with B.S. 747.

(3) (a) Except for buildings of the warehouse class the quality of built up roofing shall be—

(i) underlay not less quality than 10 lb. per 12 sq. yard roll, and

(ii) finishing layer not less quality than mineral finish 80 lb. per 12 sq. yard roll;

(b) for buildings of the warehouse class the minimum quality shall be—

(i) underlay 1-ply roofing felt 32 lb. per 12 sq. yard roll, and

(ii) finishing layer 3-ply roofing felt 52 lb. per 12 sq. yard roll:

Provided that for roofs of less slope than that given in rule 2 (1) glass fibre or asbestos felt (B.S. 747) shall be used.

(4) Where flat roofs are used as terraces an underlay of glass fibre base roofing felt, 30 lb. per 12 sq. yard roll shall be provided, over which concrete or similar impervious tiles shall be laid in hot bitumen compound.

(5) (a) All underlays shall be laid on a hot bitumen compound.

(b) For a strip 18 in. wide or thereabouts, round the outer edge of the roof a suitable bitumen solution primer shall be applied.

3. Timber roofs shall be covered in the manner described in rule 2 of this Schedule except that—

(a) an additional underlay of felt (10 lb. per 12 sq. yard roll) shall be provided, and

(b) the first underlay shall be fixed by nailing with clout headed galvanized nails at 2 in. centres along the exposed edge of the felt $\frac{1}{2}$ in. therefrom, the remaining layers shall be bonded as described in CP.144.101.

4. Except as specifically referred to in rules 2 (1), (2) and (3) of this Schedule, the use of bitumen felt roof coverings will satisfy the requirements of these By-laws if used and laid in accordance with CP.144.101 or any amendments thereto.

SIXTH SCHEDULE

(by-law 27)

PUBLIC BUILDINGS

For the purpose of the application of the Rules in this Schedule, "Public Buildings" shall be deemed to be divided into the following groups:—

Definition of groups

Group I a.—Church, chapel or other place of public worship;

Group I b.—Library, art gallery, exhibition hall;

Group II.—Hospital, nursing home or similar institution;

Group III.—Theatre or building designed primarily for the performance of stage plays;

Group IV.—Cinemas;

Group V.—Other public buildings used as a place of assembly for persons admitted thereto by ticket, membership or cover charge, or any combination thereof, for the purpose of entertainment;

Group VI.—Day or boarding schools and colleges.

The Rules in this Schedule shall apply to such groups as are indicated over each rule.

All Groups

1. The siting, design and construction of public buildings shall be such as to secure the safety of the public. Design.

Groups III and IV

2. (1) The premises shall abut upon two or more thoroughfares. The frontages shall, except in special circumstances, from about one half of the total boundaries of the site of the building excluding recesses and projections which do not prejudicially affect exits, and shall permit of the provision of suitable exits in accordance with this Schedule from each tier or floor direct to two or more thoroughfares. The thoroughfares shall be of such widths as will enable the persons who are to be accommodated to disperse rapidly in the event of fire or panic and as will afford facilities for the approach of fire appliances.

(2) In cases in which the premises will accommodate more than five hundred but not more than two thousand persons, one of the thoroughfares upon which such premises abut shall be at least 40 ft. wide.

(3) In cases in which the premises will accommodate more than two thousand but not more than three thousand persons, one of the thoroughfares shall be at least 40 ft. wide and of the others one shall be at least 30 ft. wide if a carriageway, or 20 ft. wide if a footway.

(4) In cases in which the premises will accommodate more than three thousand but not more than five thousand persons, one of the thoroughfares shall be at least 50 ft. wide and of the others one shall be at least 30 ft. wide.

(5) In cases in which the premises will accommodate more than five thousand persons, such further frontage to thoroughfares shall be provided as the council may require.

(6) Provided that premises accommodating no more than two thousand persons, in which there is no stage and in which scenery will not be used, may abut only upon one thoroughfare if such thoroughfare is not less than 40 ft. wide and if open passageways leading to such thoroughfare are provided around the remainder of the premises. In any such case the passageways shall have a minimum width of 8 ft. throughout, increasing in width by 1 ft. to every one hundred persons in excess of eight hundred to be accommodated in the premises.

(7) In any case in which some of the exits from the premises discharge into a street which is little frequented and not accessible by a short route from the thoroughfare in which the entrances are situated direct access between the two thoroughfares shall be provided by means of an external passageway if the council shall so require.

(8) The passageways referred to in this rule shall be and shall remain under the complete control of the owner, lessee or licensee, shall be unobstructed, shall be open to the sky, and, if less than 12 ft. wide, shall not be overlooked by windows from adjoining premises at a height of less than 12 ft.

Group III

Premises
under or over
other buildings.
3. Premises in which a stage will be provided and in which scenery will be used shall not be constructed underneath or above any other building:

Provided that such stage premises, hereinafter in this proviso called the "upper premises", may be constructed over other premises, hereinafter in this proviso called the "lower premises", subject to such of the following conditions as the council may consider it necessary to impose—

- (a) the site of the premises shall abut on at least three public thoroughfares;
- (b) the lower premises shall be licensed by the council as a place of public entertainment;
- (c) the lower premises shall not be constructed as a theatre or for performances involving the use of any scenery.

Groups III, IV and V

Dwellings.
4. Unless the council otherwise agrees dwellings shall not be provided in public buildings.

Groups III, IV and V

Floors and
tiers.
5. (1) Unless the council otherwise agrees, the premises shall not have more than two tiers, including the gallery, above the level of the pit, and a tier shall not be constructed with a slope of more than thirty-five degrees:

Provided that, where the front seats of any tier are separated from the other seats by a partition, such seats shall not count for the purpose of this Schedule as a separate tier.

(2) The height between the pit floor or the floor of any tier and the ceiling over shall in no part be less than 9 ft.

Groups III and IV

6. (1) Gangways shall be provided intersecting the seating in such manner that there shall be no seat of which the centre line is more than 12 ft. from a gangway, measured along the line of seating, or, where the seatway measured as set out in rule 16 of this Schedule exceeds 15 in., 15 ft. Gangways.

(2) Gangways shall have a width in new buildings of at least 44 in. and in other buildings of at least 40 in. except as provided in rules 6 (3) and (4) of this Schedule.

(3) Where the space in front of any seat serves as a seating division but is not calculated as a regular gangway, it shall have a width of at least 28 in.; where it does serve as a gangway it shall be of a width laid down in rule 6 (2) of this Schedule.

(4) A gangway at the rear of the seating may be dispensed with if all the gangways referred to in rule 6 (1) of this Schedule lead direct to exitways of equal or greater width. In all other cases the rear gangway shall be of a width equivalent to the total width of all gangways discharging into it, less one-half of the total width of all exits leading from it, subject to the minimum width laid down in rule 6 (2) of this Schedule.

(5) In Groups III and IV the line of travel from any part of any gangway to the nearest exit from the auditorium shall not exceed 75 ft.

(6) No chairs, seats or other obstruction shall be placed or allowed to remain in any gangway.

Groups I, III and IV

7. (1) Every corridor or passage or staircase leading to an exit shall be of the clear minimum width laid down for that exit. Width of corridors and passages within the building.

(2) Where two or more exits open into a corridor or passage at successive points in its length proceeding in the direction of exit, the width of such corridor or passage shall be increased at each such successive point by the width of the exit opening into it at that point.

(3) The width of an exit shall not be less than eighty-five per cent of the width of the corridor or passages leading to it.

(4) Where the route from the auditorium to an exit passes through a lounge, foyer, crush hall or a similar space a clear path of the width of the corridor or passage concerned shall be maintained through such space.

(5) In new buildings no corridor or passage shall be less than 44 in. in width.

(6) Rule 7 (2) and (5) shall not apply to passages serving boxes only.

Steps and
ramps, etc. in
gangways,
corridors
and passages.

All Groups

8. (1) In new buildings steps shall not be used to overcome difference in level in a gangway unless the slope of such gangway exceeds one in ten.

(2) Where steps of a pitch exceeding thirty degrees or ramps of a slope exceeding one in ten are provided in gangways flanking the seating, suitable handrails shall be provided.

(3) Where such a gangway intersecting the seating is more than 7 ft. 6 in. in width, a central handrail shall be provided.

(4) Rule 8 (2) and (3) of this Schedule shall not apply to premises to which rule 1 applies.

(5) In Groups III, IV and V guard rails not less than 3 ft. 6 in. above the floor level shall be provided on the resters at the foot of gangways in circles and galleries or areas where the incline of the gangway exceeds fifteen degrees. The resters themselves shall be not less than 2 ft. 6 in. in height from floor level and shall be solid for that height and so constructed, if with a top shelf, that articles placed thereon cannot fall outwards.

(6) In new buildings less than a three-step flight shall not be used to overcome differences of levels in a corridor or a passage and where practicable inclines or ramps of a gradient not exceeding one in ten shall be used.

(7) Single steps shall not be used in corridors, passages and gangways and not less than three risers shall be used at any one point.

All Groups

Outside stair-
ways and
ramps.

9. (1) Unless the council otherwise agrees outside iron stairways will only be allowed as an expedient to remedy deficiencies in the exit facility of existing buildings or in a new building accommodating less than three hundred persons. Where allowed, they shall be arranged to pass well clear of all windows, or such windows shall be fitted with fire-resisting glazing in fixed metal frames.

(2) No outside stairway shall be so arranged as to reduce the width of an external passage-way below that required by these Rules, nor so as to discharge against or across the direction of exit in such passage-way.

(3) Ramps of a slope not exceeding one in ten may be employed in lieu of outside stairways.

(4) If used, ramps shall be maintained with a non-slippery surface and if the slope is greater than one in twelve, handrails shall be provided as for stairs.

All Groups

Non-slipping
surfaces and
edges.

10. (1) All gangways and exitways and the treads of steps and stairways shall be maintained with non-slippery surfaces.

(2) If so required by the council, edges of the treads of steps and stairways shall be made conspicuous.

All Groups

11. (1) Stairways and ramps intended for public use shall be of the width laid down for corridors and passages (see rule 7 of this Schedule) provided that in groups other than Groups III and IV where the total unit width required by rule 17 of this Schedule does not exceed 3 exits and the corridors, passages, staircases leading therefrom may be reduced to 2 ft. 9 in. in width.

Stairways and ramps.

(2) Unless the council otherwise agrees, stairs intended for public use shall be constructed without winders.

(3) Unless the council otherwise agrees, no flight of stairs shall have more than sixteen or less than three risers.

(4) If landings are necessary between storeys they shall be at least 4 ft. long measured in the direction of travel.

(5) If a door is at the head of a flight of stairs, a landing at least 2 ft. longer than the folds of the door when open shall be provided as clearance space between the door and the flight:

Provided that where alterations are carried out to an existing building, a landing at least as long as the folds of the door shall be provided.

(6) There shall not be more than two successive flights without a turn.

(7) Treads shall not be less than 10 in. wide and risers not more than 6½ in. high.

(8) A minimum vertical headroom of 7 ft. from the nose of the tread shall be maintained throughout.

(9) The method of calculating dimensions shall be as set out in by-law 133 of these By-laws.

Groups III and IV

12. (1) A continuous handrail shall be fitted on each side of stairways or ramps of a slope exceeding one in ten in such manner as not to project more than 3½ in. over the stairway or ramp. Such handrails shall be 2 ft. 9 in. above the stair and 3 ft. above the landing or ramp. If the stairway or ramp is more than 7 ft. 6 in. wide a central handrail shall also be fitted. Ends of handrails shall be finished to the satisfaction of the council.

Handrails

(2) Where the central handrail cannot conveniently be carried across a landing, the upright supporting the handrail of the lower flight shall be carried to the ceiling or to a height of not less than 7 ft.

(3) Where stairways join at an angle, or change direction, the handrail shall be so arranged as to direct the flow of traffic and defend corners without reducing the width below that required.

(4) All recesses and internal angles shall be suitably defended in such a way as not to reduce the effective width of the corridor, passage or stairway.

Groups III, IV and V

13. (1) Booking offices and cloakrooms shall not be so placed as to obstruct exitways, and shall be adequately ventilated.

Booking offices and cloakrooms

(2) Ticket boxes and attendants' seats shall not be fixed in such positions that they will obstruct exitways.

(3) Mirrors, pictures, notices or advertisements shall not be in positions in which they will be likely to cause obstructions to exitways.

(4) Advertisement boards or easels shall not be placed in positions in which they are likely to obstruct means of exit or to be overturned.

Groups III, IV and V

Vestibules.

14. (1) The aggregate unobstructed width of all the exit doorways or passages that lead from a vestibule towards a street shall be at least one-third greater than the aggregate width of all other exits that lead into such vestibule.

(2) Where advertising boards or easels are placed in a vestibule, lobby, crush hall or similar space, they shall be railed off from areas traversed by the public or properly secured so as not to affect egress.

Groups III and IV

Cloakrooms

15. (1) Provision shall not be made in corridors for hanging garments.

(2) Where cloakrooms are provided, they shall be enclosed in fire-resisting materials, and shall be so situated that the persons using them shall not interfere with the use of any exitway. The fittings shall be of metal, hardwood or other approved material.

Groups III and IV and Group V (in the case of rule 16 (6) of this Schedule only)

Seating.

16. (1) The seating as allotted to each person shall not be less than 2 ft. 6 in. deep where backs are provided and not less than 2 ft. deep where backs are not provided, and shall not be less than 1 ft. 3 in. wide where arms are provided and not less than 1 ft. 6 in. wide where arms are not provided.

(2) In all cases there shall be an unobstructed space at least 1 ft. in depth, measured between verticals, between the back of one seat and the front of the seat immediately behind and for reclining seats this measurement shall apply in the extended position.

(3) The seating shall be fixed firmly to the floor.

(4) If the seats be made to tip up automatically, they shall be actuated by weights.

(5) The positions of seats shall be so arranged as to avoid undue obstruction on the line of sight.

(6) In the case of premises which are not intended to be used regularly for the purposes of Groups III and IV, provision shall be made for the seating to be in accordance with rule 16 (1) and (2) of this Schedule and where the council consider it necessary provision shall be made for fixing securely to the floor the rows of seating flanking the front, back and cross gangways and the seats near the exits. If chairs are used they shall be interlocked in lengths of not fewer than four chairs. If tip-up seats of the type referred to in paragraph 4 of this rule are used, they shall be interlocked in lengths of not fewer than three seats.

(7) A copy of the seating plan shall be kept readily available for inspection at the premises.

Groups III and IV

17. (1) Every public portion of the building shall be provided with exits adequate both as to number and size. Exits.

(2) Two separate exits shall be provided from each floor which accommodates not more than five hundred persons, and where a floor accommodates more than five hundred persons an additional exit shall be provided for every two hundred and fifty or part of two hundred and fifty persons above five hundred.

(3) The number of unit exit widths shall be determined by application of Formula A at the end of this Schedule. A unit width shall be 22 in.

(4) Any width so determined shall be the clear open width.

(5) If a floor is divided into two or more parts, exits as required by this Schedule shall, if the council so require, be provided from each part.

(6) In calculating the number of persons which can be accommodated in a floor or part thereof, the accommodation of all standing and waiting spaces in such floor or part thereof shall be included. For the purpose of this rule any tea room, lounge, restaurant or foyer shall be regarded as a waiting space.

(7) Exits shall be arranged so as to afford a ready means of egress from all parts of each floor and shall lead directly into thoroughfares or ways as heretofore described. Where the principal fire risk is on the stage, some of the exits from each part of each floor shall be placed in positions remote from the stage.

(8) If the council requires, steps leading from a floor to an exit shall, if necessary, be screened from such floor by fire-resisting materials and shall be lighted to the satisfaction of the council.

(9) All entrance and exit doors shall be arranged so as to be available for exit during the whole of the time that the public are on the premises.

(10) An exit on or by way of a stage or platform shall not be regarded as one of the required exits for the public; and an exit on the side of the stage or platform remote from the audience shall not be so regarded unless completely separated from the stage by fire-resisting construction.

Group III

18. In buildings where seating for more than four hundred persons is provided and in which scenery is employed, the following exits shall be provided—

Exits from
stage, flies, etc.

(1) an exit from each side of the stage, one of which shall be to the open air by way of an unventilated lobby entirely separated from the stage by fire-resisting construction with a self-closing fire-resisting door at the stage and opening in the direction of an exit and a self-closing door at the outer end;

- (2) two exits from the stage basement, one of which shall lead to the open air either directly by way of a self-closing door or by way of a lobby entirely cut off from the stage, such lobby may connect with the lobby required by rule (1) of this Schedule if a smoke stop door be provided at the junction of such lobbies;
- (3) adequate means of escape to the open air by ladder or staircase which may be external or separated from the stage by material having a fire resistance of half an hour.

Group III

Dressing rooms.

19. (1) Dressing room and staff room accommodation for performers and staff shall be provided as the council may consider necessary.

(2) In a building in which scenery is employed, dressing rooms shall be separated from the stage by walls or partitions constructed of materials having a fire resistance of half an hour, openings being fitted with fire-resisting self-closing doors arranged, if desired, to swing both ways. Exits shall be provided from the dressing room area, one of which shall lead direct to the open air by way of a self-closing door without passing on to the stage or through or across any of the approaches to the stage.

(3) The exit doors from the dressing room block shall be fitted with panic bolts only. The doors to single dressing rooms may be fitted with other approved fastenings.

(4) In a building in which scenery is occasionally used having a dressing room accommodation for more than fifteen persons, there shall be at least one exit from the dressing rooms and such exit shall lead to the open air without passing on to the stage or through or across any of the approaches to the stage. If direct to the open air this shall be by way of a self-closing door. If it is necessary to pass through a passage or corridor to gain the open air such passage shall be separated from the stage by walls constructed of materials having a fire resistance of half an hour. There shall be a smoke-stop door between the dressing room area and the stage.

(5) In small halls in which scenery is occasionally used, with dressing room accommodation for less than fifteen persons, egress may be arranged by means of dressing room windows, and dressing room doors shall be so constructed and arranged as to prevent the passage of smoke from the stage area for a sufficient period to permit of the escape of occupants of the dressing room.

Groups III and IV

Exit notice provisions and illumination.

20. (1) All exits in sight of the audience shall be indicated by the word "EXIT". These notices shall be illuminated and coloured green.

(2) All doors or openings leading from the auditorium other than exits shall be indicated by the words "NO THOROUGHFARE". These notices shall be illuminated and coloured red.

(3) At any point at which it is possible for any doubt to arise as to the direction of the exit, or where persons might unwittingly move into danger, an illuminated notice coloured green shall be provided, with the sign "TO EXIT—>".

(4) The notices required by paragraphs (1), (2) and (3) of this rule shall be illuminated both by main and safety lighting services and shall be placed above or adjacent to the doors to which they relate, in a position satisfactory to the council not less than 6 ft. 9 in. above the floor level.

(5) The lettering of EXIT notices shall be not less than 6 in. in depth.

(6) The lettering used for notices required by this rule shall consist of plain block lettering, so proportioned that the width of letter (except the letter "I") is not less than five-sevenths of its height and the thickness of a letter is not less than one-fifth of the width of the letter.

(7) The notices shall not contain any ornamentation or be so placed that their legibility may be impaired.

Groups III and IV

21. (1) All doors used by the public as exit doors shall, unless otherwise agreed by the council in writing, be hung in two folds, shall be made to open in the direction of the exit and shall be hung so as not to obstruct, when open, any gangway, passage, staircase or landing. If such doors are also intended for use as entrances, one of the folds shall be made to open both ways.

(2) Doors, if leading into exit passages, staircases or corridors, if not exit doors, shall if considered necessary by the council, be hung so as to be closed by the stream of persons passing from the auditorium to the street and shall in any case be fitted with springs and arranged so as not to clash with exit or other doors.

(3) A door shall not open immediately upon a step or steps, but a landing, at least 3 ft. in distance, shall be provided between the step or steps and the door.

(4) Where, for convenience of working, a door not providing fire separation, is required to be held open into a vestibule or corridor, it shall be fitted with a suitable device which will allow it to be shut readily by gentle pressure in case of emergency.

(5) No fastenings other than panic bolts shall be fitted on exit doors. The panic bolts shall be without sharp projections and shall be of such a pattern that horizontal pressure on either cross bar will open the doors. The cross bars shall not be placed at a greater height than 3 ft. Doors fitted with panic bolts shall have the words "PUSH BAR TO OPEN" or other appropriate notice painted upon them in block letters at least 4 in. high.

(6) In the case of exit doors which it may be desired to keep open whilst the public are on the premises, special provision shall be made for fastening them open in such a manner as not to form a recess. Any cabin hooks or fittings which may be used shall not prevent a door from opening back to the full extent.

(7) Gates across exitways shall not be fitted with any fastenings other than panic bolts, shall be made to open both ways, and shall be so fitted that when opened inwards they can be locked back against the wall in such a manner as to require a key to release them. When locked back, they shall not form an obstruction.

Doors and
fastenings

Collapsible gates and rolling shutters.

(8) Panic bolts on external gates shall be of a specially strong type and the working parts shall be of a metal not liable to corrosion.

(9) Internal exit doors shall be made to swing or to open in the direction of exit and shall not be fitted with any fastenings other than automatic bolts.

(10) Unless the council otherwise agrees, revolving doors shall not be provided and, if allowed they shall be made to collapse automatically and side doors opening in the direction of exit shall also be provided.

Groups III and IV

22. Unless the council otherwise agrees, collapsible gates or rolling shutters shall not be installed in entrances or exits, and any such gates or shutters which may be installed shall be opened to allow full width and height of exitway before the admission of the public and shall be kept locked in that position during the whole of the time that the public are on the premises. A notice stating the requirements of this rule as to the opening and locking of the gates or shutters shall be kept posted in a conspicuous position near the gates or shutters.

Barriers.

23. (1) Any barriers which may be provided for checking or controlling admission shall be arranged so that the portions immediately in the line of exit will open automatically upon pressure being applied in the direction of exit, and so as not to reduce the width of the exitway. All such barriers shall be shown on the plans submitted for approval in accordance with these By-laws.

(2) Rope barriers shall be fitted with automatic catches or slip connexions, and shall be arranged so as not to trail on the floor when parted and the fittings shall not project into the gangway or exitway.

(3) Locks, monkey-tail, flush or barrel bolts, or locking bars or other obstructions to exit, other than such as are permitted by this Schedule, shall not be fitted on any barriers.

Groups III and IV

Chains and padlocks.

24. If chains or padlocks be used for securing exit doors when the public are not on the premises, a keyboard shall be provided in an approved position, and before the admission of the public, the chains and padlocks shall be hung upon such board, each in an allotted position, and shall remain upon the board during the whole of the time that the public are on the premises. The chains and padlocks when in use shall be attached to the bars of the automatic fastening.

Soft furnishings.

25. (1) Carpets, druggets, matting and other floor coverings shall be secured in such a way as not to ruck up and cause obstruction, and mats over $\frac{1}{2}$ in. in thickness shall be sunk to the floor level, unless of rubber with wide bevelled edges.

(2) Curtains shall be adequately supported. They shall not be hung across gangways or over stairways; where hung over doorways or across corridors they shall be so arranged as to draw easily from the centre and slide freely, and be so hung that they are clear of the floor.

Group III

26. (1) In all premises where a stage is provided it shall be separated from the auditorium by a proscenium wall. The wall shall be carried up to a height of at least 3 ft. above the roof, measured at right angles to the slope of the roof, and shall be carried down below the stage to a solid foundation. The wall shall have a fire resistance of four hours. Proscenium.
- (2) Not more than three openings, exclusive of the proscenium opening, shall be formed in the proscenium wall. No such opening shall exceed 20 sq. ft. in area and the lowest part shall not be at a higher level than 3 ft. above the floor of the stage. Such openings shall be fitted with doors and frames having half the fire resistance of the walls.
- (3) The proscenium opening shall be provided with a fire-resisting screen or safety curtain to be used as a drop curtain, of such pattern, construction and gearing, and with such arrangements as may be approved by the council for pouring water upon the stage surface of the screen or curtain.
- (4) This rule, so far as it relates to the provision of a proscenium wall and a safety screen or curtain, shall not apply to a small hall accommodating not more than five hundred persons if the hall is on the ground floor, and if the council is satisfied with the exits and with the precautions proposed to be taken to obviate danger in the event of fire on the stage.
- (5) All the decorations around the proscenium opening, as far as possible, shall be constructed of incombustible materials.

Groups III and IV

27. The safety curtain covering the proscenium opening shall be capable of being lowered to its full extent at all times. The words "Safety Curtain" shall be painted across the front of every fire resisting curtain and on the side facing the auditorium in 12 in. block letters. Such lettering shall occupy a space not less than 4 ft. from the bottom of the curtain, and shall, when the curtain is lowered, be entirely visible to the whole of the audience. Safety curtain.

Group III

28. (1) The space above the stage shall be of sufficient height to allow of the safety curtain being raised above the top of the proscenium opening in one piece and of all scenes being so raised without rolling. Stage roof and lantern light.
- (2) The roof over the stage shall be of fire resisting materials and shall be provided with a lantern light or lights at the back thereof equal to the base to one-sixth of the area of the stage. Such lantern light or lights shall be glazed at the sides with sheet glass not more than 1/12th of an inch in thickness and shall be capable of being opened to an extent equal at least to the superficial area required at the base of the lantern light.

(3) The sashes shall be bottom hung to open outwards; shall be of a type that cannot be rendered inoperative by warping, settlement, or dirt, and shall be capable of being opened by the cutting of a cord and/or by the fusing of a link. Such cord shall be brought down to the stage to a position near the safety curtain release and shall be suitably indicated.

Group III

Stage ventilation.

29. The stage shall be ventilated to the satisfaction of the council.

Group III

Stage floor
scenery,
access, etc.

30. (1) The stage floor shall be constructed to have half an hour's resistance to fire.

(2) The flies including the lighting flies, perches, and gridiron, shall be of fire-resisting material and adequate means of escape to the open air shall be provided therefor.

(3) The scenery shall be counterweighted and hung on wire ropes as far as practicable. Counterweights of scenery shall be guarded, and where possible, shall be carried to the walls and cased in.

(4) Access to the flies, gridiron, electricians' perches and other raised platforms, other than lighting perches not more than 4 ft. above or below a platform or fly to which suitable access is provided, shall be provided by means of stepladders with handrails.

(5) Unless the council otherwise agrees, scenery or stage properties shall not be kept or used on the platform or in any other part of premises which are not provided with an approved safety curtain.

All Groups

Temporary
proscenium.

31. In premises which are not provided with a safety curtain, a proscenium will be permitted for occasional use with the consent of the council if formed of heavy woollen curtains or other approved material. The proscenium shall be removed within such time after use as the council may consider reasonable.

Group III

Storage of
scenery, etc.

32. (1) Scenery or properties shall not be kept or used in the stage basement or in any part of the premises other than on the stage or in the approved scenery and property store.

(2) The stage shall not in any circumstances be congested with scenery or properties or the exits therefrom obstructed during performances.

(3) Except with the consent of the council in writing, and subject to the conditions of such consent, scenery or properties shall not be placed on the auditorium side of the safety curtain.

THE ABOVE RULE APPLIES ONLY TO PREMISES AT WHICH A SAFETY CURTAIN IS PROVIDED. FOR THE RULE RELATING TO THE USE OF SCENERY IN PREMISES WITHOUT A SAFETY CURTAIN SEE PRECEDING RULE 30 OF THIS SCHEDULE.

Groups III and IV

33. In buildings seating over four hundred persons where a scene dock, workshop or store (other than a small property store) is provided it shall be separated from the stage and auditorium by fire division walls and by a fire-resisting door or a roller shutter, which shall be kept closed except when scenery is actually being taken through it, and shall be arranged to close automatically by means of fusible links.

Separation
from stage
and auditorium
of scene docks,
etc.

Group III

34. Liquids with a flash-point 23°C. (73°F.), e.g. petrol, shall not be permitted on premises used for the purpose of public assembly, except—

Inflammable
liquids.

- (a) a quantity not exceeding two pints kept in an approved container with a screwed cap or top;
- (b) a quantity of not more than half a pint in a container filled with absorbent material for use in connection with an internal combustion engine on or about the stage; or
- (c) a quantity not exceeding four gallons, kept in properly closed metal vessels containing not more than two gallons each for use in an internal combustion engine driving service plant (e.g. for lighting), in addition to a quantity not exceeding two gallons in the supply tank of such engine.

All Groups

35. For fire fighting equipment see by-law 214 of these By-laws.

Fire
fighting.

Group III

36. (1) Unless the council otherwise agrees fire extinguishers shall be provided and distributed throughout the building as follows—

Fire precautions
and appliances.

- (a) one each side of stage at stage level;
- (b) one each side of stage at every level of flies;
- (c) one in scene dock;
- (d) one in each passage to dressing-rooms;
- (e) two for every 5,000 sq. ft. of floor area with a minimum of two per storey.

(2) Asbestos blankets or rugs shall always be kept in the wings of any stage, and shall have placards indicating their position legibly printed or painted and fixed immediately above them.

(3) Hatches, hooks or other means for removing hanging scenery in case of fire, shall always be kept in readiness adjacent to such scenery.

(4) No alteration, rearrangement or readjustment whatsoever may be made in respect of any of the aforesaid appliances.

Groups III and IV

Ventilation.

37. (1) An approved means of ventilation capable of supplying fresh air shall be provided. The ventilation may be effected by means of mechanical plant. A mechanical supply will not be required if the council is satisfied that the standard of ventilation prescribed by this rule can be maintained by natural means.

(2) If mechanical ventilation is provided—

- (a) the entering air shall be so distributed that all occupied parts of the building including entrance vestibules, waiting spaces and refreshment saloons, will be reached and the vitiated air effectually exhausted;
- (b) the condition of the air shall not be regarded as satisfactory if the amount of carbon dioxide in occupied portions of the premises, taken at a level of three to six feet above the floor level, exceeds ten parts in ten thousand;
- (c) the ventilation system shall be so designed that no objectionable draught or noise is caused;
- (d) where air ducts and shafts are constructed of material other than metal they shall be formed of, or lined with an approved metal impervious to moisture. All ducts shall be provided with facilities for cleaning and shall be maintained in a clean condition;
- (e) an efficient air washer or filter shall be installed unless the council agrees that a satisfactory standard of humidity will be otherwise secured and that the intake will be free from contamination. If an air washer be installed, provision shall be made for controlling the temperature of the water;
- (f) the installation shall be capable of running continuously at full capacity for 12 consecutive hours without undue rise of temperature in the motors or other working parts;
- (g) in any premises at which a safety curtain is provided to the proscenium opening, the installation shall be such that under any conditions of working it shall not be possible for a current of air to be drawn from the stage to the auditorium and, in order to ensure this, separate means of extracting air from the stage shall be provided if required by the council;
- (h) separate means of extraction from latrines shall be provided and so arranged that the air movement shall not be from the latrine into other parts of the premises;
- (i) all regulating parts to secure effective air distribution if accessible to the public shall be fitted with pointers or other means of indicating the positions in which they are set and with an approved locking device which cannot readily be interfered with by the public;
- (j) convenient means of access to all fans, motors, control gear and other apparatus shall be provided and the starting mechanism shall be adjacent to or in sight of the machinery which it controls;

- (k) the materials used for the ventilation shall be incombustible so far as may be reasonably practicable;
- (l) the means of ventilation shall be used continuously during the whole of the time that the public are on the premises;
- (m) detailed instructions for the working of the ventilation system shall be exhibited in such positions as the council may require.

Group IV

38. (1) Subject to the provisions of rule 39 of these Rules separate rooms shall be provided as a projection room and as a rewinding room respectively, and inflammable film shall not be projected except in the projection room, or rewound, cleaned or (except on the ordinary course of projection) otherwise manipulated, except in the rewinding room.

Projection and
rewinding
rooms.

(2) (a) Projection rooms, rewinding rooms and any part of the building to which there is direct access from a projection or rewinding room shall be well ventilated with fresh air.

(b) One entrance to the projection room shall be from the open air.

(c) Each projection or rewinding room shall be provided with a doorway and, unless the council otherwise agrees, with an alternative way of egress for the operators, whether a doorway, hatchway or window.

(3) No doorway or hatchway of a projection or rewinding room shall communicate directly with the auditorium or any other part of the building to which the public are admitted.

(4) (a) All doorways and hatchways of projection or rewinding rooms shall be provided with doors or hatches.

(b) Such of the said doors and hatches as open upon any room, lobby or space communicating directly with the auditorium or with any other part of the building to which the public are admitted shall be close-fitting so as to prevent, so far as practicable, the passage of smoke.

(c) All doorways of the projection and rewinding rooms, other than communicating doorways between them, shall be fitted with self-closing doors so constructed and maintained that they will open easily on being pushed from inside, and can be opened from outside the projection or rewinding rooms.

(d) All holes (other than doorways and hatchways) in the walls, ceiling or floors of protection or rewinding rooms through which smoke might pass directly into another part of the building shall be so sealed as to prevent the passage of smoke.

(e) Every communicating doorway between the projection and rewinding rooms shall be fitted with a close-fitting, self-closing door, so constructed and maintained that it can be opened easily from either side, and the door shall be kept closed when not in immediate use.

(f) Every other opening allowing direct communication between the projection and rewinding rooms shall be fitted with a close-fitting, fire-resisting hatch or shutter which shall either be secured in a closed position or be so constructed and maintained as to be self-closing.

(5) The doors and hatches of projection or rewinding rooms, other than those communicating directly with the open air or allowing direct communication between a projection room and another projection room or a rewinding room, shall, except when in immediate use, be kept closed while the public are on the premises.

(6) The walls, floors and ceiling (except for windows, skylights and openings therein communicating directly with the open air) and doors of the projection and rewinding rooms shall be so constructed or lined as to be fire resisting.

(7) All fittings, fixtures, furniture and furnishings (other than floor coverings) in the projection and rewinding rooms shall be of metal, hardwood, or such other material or so treated and maintained as not readily to catch fire.

(8) No person unless authorized by the person in charge of the premises shall be permitted to enter or remain in a projection or rewinding room while the public are on the premises.

All Groups

Substandard
size film.

39. (1) The provisions of paragraph (1) of rule 38 of this rule shall not apply in relation to film which does not exceed 16 millimetres in width and which is not inflammable film.

(2) No inflammable substance shall be used in repairing or joining film in the auditorium or any other part of the premises while the public are present.

(3) When non-inflammable film which does not exceed 16 millimetres in width is projected in the auditorium the following provisions shall apply—

- (a) the film projector shall be surrounded by a clear space at least 3 ft. wide which persons, not authorized by the person in charge of the projector, are prevented from entering by the erection of a barrier or other effective means;
- (b) no smoking shall be permitted within the said clear space;
- (c) the film projector shall be in the charge of a competent person who shall be present within the said clear space whenever the projector is working;
- (d) (i) no illuminant, other than hermetically sealed electric light, shall be used in the film projector;
- (ii) the illuminant shall be separately encased in such a way as to prevent it accidentally coming in contact with the film;
- (e) electrical conductors used for the film projector shall, so far as practicable, be placed out of reach of the public.

All Groups

Projectors.

40. (1) No film projector shall be used for a cinematograph exhibition unless it is fitted—

- (a) with a metal shutter which, when the projector stops, automatically cuts off the source of light from the film gate;
- (b) with another metal shutter which can be readily inserted by hand between the source of light and the film gate.

(2) The film gate of the projector shall be of solid construction and so constructed as to provide an ample heat-radiating surface.

(3) The opening above and below the film gate of a projector shall be sufficiently narrow to prevent flame travelling upwards or downwards.

(4) The foregoing provisions of this rule shall not apply to film projectors constructed to use only film not exceeding 16 millimetres in width and of which the illuminant complies with the provisions of subparagraph (d) of paragraph (3) of rule 39 of this Schedule.

(5) All the mechanism of a film projector shall be guarded except in so far as this is not reasonably practicable in the particular circumstances.

Groups III and IV

41. The supply of electricity to film projectors, spot-lights, effects lamps or other electrical apparatus for the production of lighting or optical effects shall be by way of a circuit or circuits separate from any circuit used for supplying electricity for the general lighting or the safety lighting.

Electrical supply for projectors and other equipment.

Groups III and IV

42. (1) In all parts of the building to which the public are admitted and in all passages, courts, ramps and stairways to which the public have access and which lead from the auditorium to outside the premises there shall be provided means of illumination (in these Rules referred to as "general lighting") by electricity capable of illuminating those parts clearly.

General lighting.

(2) All notices indicating exits from any part of the premises to which the public are admitted shall be illuminated by the general lighting at all times when the public are on the premises.

(3) (a) The means by which the general lighting is controlled—

(i) shall be so situated as to be easily accessible to those members of the staff who may be required to operate them;

(ii) shall be so situated or concealed that members of the public are unlikely to interfere with them;

(iii) shall not, in the case of electrical switchgear, be situated in a rewinding room unless that room is also a projection room;

(b) the means by which the general lighting of the auditorium is controlled with the provisions of subparagraph (a) of this paragraph, be so constructed and arranged that when the auditorium is not clearly illuminated by the general lighting it can be quickly so illuminated.

(c) If switchgear controlling the electricity for the general lighting of the auditorium is situated in a projection room, other means of control—

(i) situated outside the projection room and also complying with the foregoing provisions of this paragraph shall be provided; and

(ii) shall be so constructed and arranged that when the auditorium is not clearly illuminated by the general lighting it can be quickly so illuminated notwithstanding that the means of control in the projection room may be switched off or inoperative.

Groups III and IV

43. (1) In addition to the general lighting, means of illumination adequate to enable the public to see their way out of the premises without assistance from the general lighting (in these Rules referred to as "safety lighting") shall be provided—

- (a) in the auditorium and all other parts of the building to which the public are admitted;
 - (b) in all passages, courts, ramps and stairways in which the public have access and which lead from the auditorium to outside the premises;
 - (c) for the illuminating of all notices indicating exits from any part of the premises to which the public are admitted.
- (2) The safety lighting shall be kept on at all times when the public are on the premises except in those parts of the premises which are lit equally well by daylight.
- (3) Subject to the provisions of rule 44 of this Schedule the safety lighting shall be supplied from a source other than that which supplies the general lighting and shall be by electricity.
- (4) An electrical conductor used for the safety lighting shall not be contained in the same protective covering as a conductor used for any other purpose.
- (5) The means of control of the safety lighting shall be situated in a place to which the public are not admitted.
- (6) Any circuit used for supplying electricity for use in a projection or rewinding room, other than a circuit used to supply electricity to film projectors, spotlights, effects lamps or other electrical apparatus for the production of lighting or optical effects shall not be conducted to a circuit used for supplying electricity for the safety lighting unless it is so arranged and protected that the occurrence of any electrical fault therein would not affect the last-mentioned circuit.

Groups III and IV

44. (1) Any battery supplying the safety lighting shall be fully charged before the public are first admitted to the premises and, unless it is a battery mentioned in paragraph (2) of this rule, shall be of such capacity and so maintained as to be capable of supplying at normal voltage the full load of the safety lighting during the whole time that the public are on the premises.

(2) Notwithstanding paragraph (3) of rule 43 of this Schedule one or more floating or trickle-charged batteries supplied with electricity from the same source as supplies the general lighting may be used to supply electricity for the safety lighting if—

- (a) the batteries are fully charged before the public are first admitted to the premises;
- (b) the rate of charging the batteries is so regulated that the batteries will not discharge except on failure of the supply of electricity to the batteries;
- (c) the batteries will not discharge through the supply circuit in the event of a failure of the supply of electricity to the batteries;

(d) the capacity of the batteries is sufficient to supply at normal voltage the full load of the safety lighting for not less than three hours.

Group III and IV

45. (1) A battery having cells or containers of celluloid will not be permitted in the premises. Batteries

(2) A battery of a type which cannot be recharged to full capacity shall not be used to supply electricity for the general lighting or the safety lighting.

(3) Where batteries are used to supply electricity for either the general lighting or the safety lighting—

(a) such parts of the conductors connecting the batteries one to another or connecting the batteries to the fuses, circuit breakers, or other similar devices protecting the circuits going out from the batteries, as are situated within the room in which the batteries are installed shall not be enclosed in ducting or conduit;

(b) such parts of the said conductors as are situated within the said room shall, unless suitably insulated, be properly supported and separated;

(c) the fuses, circuit breakers and similar devices aforesaid, unless situated within the said room, shall be situated as near as is practicable to the point where the said conductors emerge from that room.

(4) Any battery used to supply electricity for either the general lighting or the safety lighting shall supply electricity only for the general lighting or the safety lighting as the case may be.

(5) Any battery used to supply electricity for either the general lighting or safety lighting shall, at least once in every six months, have its capacity tested by a person appointed by, or on behalf of, the occupier of the premises and the date and result of the test shall be entered in a register to be kept for the purpose and available for inspection by persons authorized in that behalf by the council.

Groups III and IV

46. If there is a failure of the safety lighting all parts of the premises in which means of illumination are provided in accordance with paragraph (1) of rule 42 of this Schedule other than the auditorium shall forthwith be clearly illuminated by the general lighting.

Failure of lighting.

All Groups

47. (1) Every electrical main circuit and subcircuit in the premises shall be protected against excess current by fuses, circuit-breakers or other similar devices which will operate automatically at current values which are suitably related to the safe current ratings of the circuit and of the equipment connected to the circuit.

Fuses, switches and earths.

(2) (a) Every circuit supplying electricity for the control equipment of electric discharge-lamps having a rated electrical input exceeding 500 watts, or for electronic equipment shall, where the fuses, circuit-breakers or other similar devices aforesaid do not afford adequate protection, be provided also with electrical or thermo-electrical devices to break the circuit automatically on any dangerous rise in the temperature of the said equipment or of the transformers, chokes or smoothing devices used in connexion therewith.

(b) Any such electrical or thermo-electrical devices shall be tested once a year by a competent electrical engineer.

(3) (a) Every main circuit and subcircuit in the premises shall be provided with earth-leakage protective devices which on the occurrence of an earth fault will disconnect the defective circuit from the supply of electricity.

(b) Subparagraph (a) of this paragraph shall not apply where the possible earth fault leakage current from the circuit substantially exceeds that required to operate the fuses, circuit-breakers or other similar devices aforesaid.

(4) All metalwork not intended to conduct electricity but liable to become charged with electricity if the insulation of a conductor should become defective or if a defect should occur in any electrical equipment shall be earthed.

(5) The supply of electricity to all electric signs, notices or advertising devices and to all electric discharge-lamp installations shall be capable of being cut off by switches or other means of control so situated as to be easily accessible to members of the staff but so as not to be easily accessible to the public.

(6) All plug and socket outlets, other than for deaf aids, in any part of the premises to which the public are admitted shall be so constructed that the pins of the plugs and the socket outlets cannot be touched while they are live.

(7) Switchgear, controlling a main circuit or subcircuit, where not in an auditorium, shall be clearly and legibly labelled to indicate which circuit it controls.

Groups III and IV

Electric discharge-lamps.

48 (1) All electric discharge-lamp installations shall comply with the following requirements—

- (a) control equipment for electric discharge-lamps and the transformers, chokes and smoothing devices used in connexion therewith shall be so placed that there is adequate ventilation and adequate access thereto for the purpose of inspection and maintenance;
- (b) fixed electric discharge-lamps shall be placed out of reach of the public or so protected that if a lamp is broken no live electrode can be touched.

(2) Without prejudice to the provisions of paragraph (5) of rule 47 of this Schedule, the supply of electricity to electric discharge-lamp installations on the outside of a building, or used within a building when the public are not admitted, and in which the voltage between any two points of the installation exceeds 650 volts shall be capable of being cut off by one or more switches or other means

of control situated outside the building and so as to be accessible to members of the fire brigade but so as not to be easily accessible to the public.

Groups III and IV

49. (1) All electric wiring shall be suitably insulated.

Wiring.

(2) All electric wiring shall have a protective covering over the insulation thereof and, except where it is necessary that it should remain flexible, shall be kept securely fixed in position.

(3) The protective covering shall be—

- (a) made of metal or other material of such rigidity as to afford substantial protection against mechanical injury;
- (b) made of material which does not readily ignite or decompose;
- (c) if made of metal, effectively earthed;
- (d) not made of lead.

(4) Where it is necessary for wiring to remain flexible its protective covering shall be flexible and the following provisions shall apply in lieu of the provisions of paragraph (3) of this rule—

- (a) the protective coverings of such wiring used in connexion with arc lamps, spot-lights, effects lamps or other electrical equipment for the production of lighting or optical effects and exposed to excessive heat shall be of asbestos or other material which will prevent the heat damaging the conductor or its insulation;
- (b) the protective covering of such wiring, other than that referred to in subparagraph (a) of this paragraph shall be such as to give a degree of protection not less than that afforded by tough rubber sheathing;
- (c) the protective covering of such wiring shall not be made of lead, and if made of metal, shall be effectively earthed;
- (d) such wiring shall not be longer than is necessary;
- (e) such wiring shall be securely fixed, and its protective covering reinforced, at the point of entry into the equipment, plug or other fitting to which it is connected.

(5) (a) The foregoing provisions of this rule shall not apply to such parts of the conductors mentioned in rule 45 of this Schedule connecting the batteries one to another or connecting the batteries to the fuses, circuit-breakers or other similar devices protecting the outgoing circuits, as are situated within the room in which the batteries are installed.

(b) The provisions of paragraphs (2), (3) and (4) of this rule shall not apply to—

- (i) wiring intended to conduct only electricity of low energy of telephones, signal systems, deaf aids, public address equipment, depolarizer circuits for electric torch batteries and other similar equipment;
- (ii) audio circuit wiring;
- (iii) internal wiring of electric organs not intended to conduct electricity at a voltage exceeding 100 volts;

- Wiring in
ventilating
ducts.
- (iv) conductors for electric-discharge lamp installations in which the voltage between any two points of the installation exceeds 650 volts if the conductors are so placed that they cannot be touched by the public and are suitably insulated and protected;
 - (v) temporary wiring if the council is satisfied that the wiring is so insulated and so protected or placed as to be reasonably safe in the circumstances.

All Groups

50. (1) No electric wiring, other than wiring for the purpose of operating or lighting the ventilating system and having its own protective covering shall be placed (otherwise than by way of repair of wiring already installed) in any ventilating duct.

(2) Any lighting fittings or other electrical apparatus installed in any ventilating duct shall be totally enclosed.

Groups III and IV

Generators,
transformers
and switchgear.

51. (1) Electricity generating plant and main supply transformers and batteries as referred to in rule 45 (3) of this Schedule shall be placed in a room to which adequate ventilation is provided to the open air—

- (a) separate from the auditorium;
- (b) of substantial construction;
- (c) of which the walls, floors and ceilings (except for windows, skylights and openings therein communicating directly with the open air) and doors shall be so constructed or lined as to be fire-resisting;
- (d) not communicating directly with the auditorium or with any part of the building to which the public are admitted.

(2) The switchgear and fuses controlling or protecting the main supply of electricity shall be placed in a room to which the public are not admitted and any door thereof which communicates directly with any part of the premises to which the public are admitted, shall be kept locked.

Groups III and IV

Heating
appliances.

52. (1) Every heating appliance in the premises which is so situate as to be within reach of any member of the public shall be fitted with approved guards.

(2) Every heating appliance used in the premises shall be situate sufficiently far from any woodwork, hangings or other materials or substance liable to catch fire for there to be no likelihood of fire by reason of their proximity to the heating appliance.

(3) Every heating appliance situated in a part of the premises to which the public are admitted shall be fixed.

(4) Every heating appliance situated in a projection or rewinding room shall be so constructed and enclosed that there is no likelihood of film igniting or decomposing by reason of contact with, or proximity to, the heating element.

(5) (a) No oil-burning heaters other than those forming part of boiler installations shall be used in the premises.

(b) No fire shall be used in a protection or rewinding room.

Groups III and IV

53. (1) The artificial lighting of the projection and rewinding rooms shall be by electricity.

Equipment in
projection and
rewinding
rooms.

(2) All transformers, rectifiers, resistances, choke coils, motors and the illuminants of viewing devices for the examination of film in the projection or rewinding rooms which are liable to attain a temperature at which inflammable film will ignite or decompose shall without preventing their proper ventilation be so guarded or enclosed as to prevent the ignition or decomposition of film by accidental contact with any of them or with any part of the equipment to which their heat may be conducted.

(3) All metal work of equipment used in rewinding film shall be earthed so as safely to discharge static electricity.

(4) No electrical equipment shall be allowed in the rewinding room except—

(a) equipment for lighting or heating the room, rewinding machines, and viewing devices for the examination of film; and

(b) telephones, signal systems, and hand torches using only electricity of low energy.

Groups III and IV

54. On completion of an electrical installation a certificate of compliance with these Rules signed by a competent electrical engineer shall be sent to the council.

Electrical
installation and
certification.

Groups III and IV

55. In addition to any tests of the electrical installation which may be made on behalf of the council, such further tests as to conductivity, insulation resistance, rise of temperature, or as to other matters, as may from time to time be required by the council as evidence of compliance with these Rules, shall be made in the presence of an officer of the council, or other person authorized to act on behalf of the council.

Electrical
installation
tests.

Groups III and IV

56. (1) All electrical installations shall be inspected once a year by a competent electrical engineer appointed by the occupier of the premises, and a certificate stating the condition of the installations shall, after each inspection, be forwarded to the council.

Inspection of
electrical insta;
lations.

(2) The certificate required by this rule should be in the following form:

"This is to certify that the electrical installation at
..... was inspected by
me on and that—

(a) The value of insulation resistance to earth is not less than
..... megohms.

(b) The earthing of the installation is satisfactory except as stated
below.

- (c) All flexible conductors, switches, fuses, plugs and socket outlets are in good serviceable condition except as stated below.
- (d) There is no sign of overloading of conductors or accessories except as stated below.
- (e) The condition of the whole installation appears to be *.....

.....
Details of defects

.....
.....
.....

Signed

* Insert condition found, e.g. safe and satisfactory.

All Groups

Inspection of ceilings.

57. All ceilings in those parts of the premises to which the public are admitted shall be inspected at least once in every five years by a competent person and a certificate concerning the condition of the ceilings after each inspection shall be forwarded to the council by, or on behalf of, the occupier.

Groups III and IV

Maintenance, alterations, etc.

58. (1) All parts of the premises and the fittings and apparatus therein, and other installations, shall be maintained at all times in good order and condition.

(2) Alterations or additions to installations, or to the seating, gangways or other approved arrangements at the premises, shall not be made except with the consent of the council.

(3) This rule shall not require notice to be given to the council of any work which is necessary for the efficient maintenance of the premises and of the electrical and other installations as approved by the council.

Group VI

Day or boarding schools and colleges.
Cap. 211,
Sub. Leg.

59. The provisions of the Education (Health and Safety) Regulations which are given in Schedule 14 shall apply to all schools and colleges.

APPENDIX TO SIXTH SCHEDULE

Groups I and IV

(1) As a guide to assessing the requirements for means of escape, the population of various portions of a building, the number of persons and the population density (where not specifically stated or shown on layout or seating plans submitted) the following is the basis of calculation per person:—

Assessment
of accommo-
dation.

- (a) 5 sq. ft. for a closely seated audience.
- (b) 5 sq. ft. for circulating gangway leading up to or provided between the sale stalls or counters in "bazaar" or "bargain" departments or retail trade premises frequented by persons in large numbers.
- (c) 6 sq. ft. in dance halls.
- (d) 12 sq. ft. in restaurants.
- (e) 50 sq. ft. in shops and showrooms.
- (f) 100 sq. ft. in offices.
- (g) 300 sq. ft. in warehouses.
- (h) 400 cu. ft. in portions used as workrooms (excluding any space more than 14 ft. from the floor) which are subject to the provisions of the Factories Act.

Cap. 514

(2) As a means of calculating the total width and number of exits required formulae A and B to this Appendix provide a reasonable basis.

Groups III and IV

Formula "A"

For determination of total width of exits required from each portion of a building (e.g. auditorium at ground level, circle, gallery, etc.) in premises with a closely seated audience and in dance halls, restaurants, etc.:—

$$A = \frac{Z \times \text{Floor area in sq. ft.}}{E \times B \times C \times D}$$

*Note.—*When a fraction of 0.3 or over results, take next higher whole number; when a fraction less than 0.3 results, take next lower whole number.

Where:—

A = Number of units of exit width required:

One unit of exit width is 22 in.

Exits should be in multiples of this width.

In existing buildings—

Doors 40 to 55 in. wide count as two units.

Doors 56 to 75 in. wide count as three units.

Doors 76 to 100 in. wide count as four units.

Doors 101 to 125 in. wide count as five units.

B = Construction of buildings:

Where constructed in accordance with the Third Schedule to these By-laws	B = 6
Other buildings	B = 4

C = Arrangements and protection of stairs:

For places not more than 21 in. above or below ground level	C = 6
Stairs from places on a single floor not more than 5 ft. above or below ground level	C = 5
Enclosed stairs from circle or gallery or stairs leading down to vestibule or direct to open air	C = 4
Stairs from circle or gallery unprotected and coming down into main floor of building	C = 3

(Note.—In such cases the exits from ground floor must be of sufficient width to handle persons from circle or gallery.)

D = Exposure hazard:

Place of public assembly will usually be rated as Medium Hazard.

This factor for High Hazard is provided to cover a situation where exposure hazard may be serious.
(See list of risks below.)

High Hazard	D = 1
Medium Hazard	D = 2

Proximity of premises of the following classes shall be held to constitute a High Hazard:—

Accumulator Makers.	Dry Cleaning.
Aeroplane Stores and Manufacturers.	Feathers.
Artificial Flowers.	Film Storage and Handling.
Artificial Leather.	Fireworks.
Bedding Manufacturers.	Flannelette.
Brush Making.	Flour and Grist Mills.
Cabinet Making.	Garages.
Candle Making.	Hay and Straw Dealers.
Cardboard Box Making.	Hemp, Flax and Jute.
Celluloid.	India Rubber Manufacturing and Treating.
Cellulose Spraying.	Insulating Material Manufacturing.
Chemical Works.	Linoleum Manufacturing.
Confectioners (Manufacturing).	Munition Makers and Stores.
Cork, Cotton Wool.	Oil and Colour Merchants.
Cotton Clothing.	Oil and Petrol Stores (unless with underground tanks).
Cotton Waste, Chemicals.	Oil Refineries.
Druggist (Wholesale and Manufacturing).	Paper Bags.

Paper Works.	Stationers (Manufacturing).
Rag and Waste Dealer.	Stables.
Rag Sorting.	Straw Goods.
Repositories (Furniture).	Toy Shops.
Saw Mills.	Upholsterers.
Ships' Chandlers.	Wood Working.
Shoddy.	

E = A factor dependent upon height of floor above or below ground level:

Each circle, balcony or tier to be considered separately. If height or depth is intermediate, take nearest figures; when height is precisely midway between two values, take the lower value of the factor. Height above ground level is to be taken as mean height of a circle, gallery, etc.

Where height = 80 ft. "E" = 260

Where height = 70 ft. "E" = 280

Where height = 60 ft. "E" = 310

Where height = 50 ft. "E" = 340

Where height = 40 ft. "E" = 370

Where height = 30 ft. "E" = 400

Where height = 20 ft. "E" = 440

Where height = 10 ft. "E" = 470

At ground level "E" = 500

Where depth = 5 ft. "E" = 470

Where depth = 10 ft. "E" = 440

Where depth = 15 ft. "E" = 370

Where depth = 20 ft. "E" = 340

Z = Class of use of building:

Use of closely seated audience Z = 50

Use as dance hall, restaurant, etc. Z = 30

Groups III and IV

Formula "B"

For determination of number of exits required:-

$$N = \frac{A}{4} + 1$$

Where:

N = Number of exits required.

A = Number of units or exits width required as determined by the use of Formula "A".

*Note.—*Where a fraction of 0.5 or over results, take next higher whole number: where a fraction less than 0.5 results, take next lower whole number.

In the application of the foregoing formulae the over-riding provisions of rule 17 need to be borne in mind.

SEVENTH SCHEDULE

REINFORCED CONCRETE: WORKING RULES

Formwork.

1. (1) The formwork shall be so constructed as to remain rigid during the placing of concrete and sufficiently tight to prevent loss of liquid content from the concrete.

(2) The vertical strutting supporting the formwork shall be carried down to such base as is sufficiently strong to afford the required support.

(3) The formwork shall be cleaned before use; any material used in treating formwork must not come in contact with the reinforcement.

(4) The formwork shall not be removed before the concrete reaches a cube strength of twice the stress to which it may be subjected at the time of striking; in normal circumstances the following times are required:—

<i>Position</i>	<i>Days</i>
Beam sides, walls and columns	2
Slabs (struts left under)	4
Beam soffits (struts left under)	7
Removal of struts to slabs	10
Removal of struts to beams	14

Reinforcement.

2. (1) Reinforcement shall not be bent or straightened in any manner that will injure the material.

(2) All reinforcement after cutting and bending shall be suitably marked in accordance with the approved plans.

(3) All reinforcement shall be free from loose mill scale, loose rust, oil, grease or other harmful matter.

(4) All reinforcement shall be properly wired or otherwise rigidly fixed together, and shall be properly spaced by the use of spacing bars, stirrups or other approved means.

(5) The space between reinforcing rods, and the thickness of the cover of the reinforcement shall be as specified herein but in no case shall such space or thickness be less than:—

(a) for the space between rods, one and a quarter times the size of the largest aggregate used in the concrete mix, or as may be required for fire resistant purposes;

(b) for the cover, half an inch of the diameter of the reinforcing rods whichever is the greater;

(c) for the end cover of the rods 1 in. or less than twice the diameter of the reinforcing rod whichever is the greater.

(6) The reinforcement shall be placed and maintained in the position shown on the approved plans, by the use of metal cradles, small concrete blocks or other approved means.

(7) The reinforcing rods shall be laid in one length wherever practicable and jointing by lapping in the length will only be permitted with the approval of the council.

(8) All reinforcement must be checked and inspected by an authorized officer of the council before pouring of any concrete takes place.

3. (1) The aggregates shall be clean and free from any deleterious matter. Concrete.

(2) The mix shall be in accordance with the approved particulars.

(3) The materials shall be mixed to an extent which ensures a uniform distribution thereof and if required mixing shall be by mechanical mixer.

(4) (a) Concrete shall be transported and deposited without segregation.

(b) The concrete shall be placed before the initial set has taken place and on placing shall be thoroughly compacted and worked round the reinforcement.

(c) The pouring of concrete in columns shall be in such stages or lifts as will enable the concrete to be properly compacted throughout.

(d) The water cement ratio shall be no greater than is sufficient to ensure the proper workability of the concrete.

(e) Water shall not be added after the concrete has been mixed.

(5) (a) Concrete shall be properly cured, the surface protected against rapid drying.

(b) Concrete shall be kept constantly wet for five days, except in the case of high alumina cement, when this period may be reduced to twenty-four hours.

(6) (a) Concreting shall be carried out continuously up to construction joints.

(b) The position of the construction joints must be arranged before work of concreting commences.

(c) When forming construction joints, unless the form of construction is otherwise specified, the concrete must be brought up for its full width and thickness to a vertical stop-board, and on no account should the concrete be permitted to flow or to find its natural slope.

(d) The stop-board must be notched closely over the reinforcement and be securely fixed.

(e) Mouldings planted on the stop-board may be used to improve the key of the joint.

(f) When concreting is resumed on a surface which has hardened, such surface must be prepared by hacking or otherwise treating. The surface treated shall be swept clean, thoroughly wetted, and covered with a brushed-grout of mortar composed of one part of cement and three parts of sand. The mortar shall be freshly mixed and placed immediately before the placing of the concrete.

(7) (a) In the construction of *in-situ* concrete floors and roof slabs, rigid sides of formwork shall be used to ensure that the concrete is of the required thickness throughout.

(b) Where it is intended that services or fittings are to be incorporated in the slab, they shall be fixed in position after the formwork has been erected, in such way that the reinforcement is not displaced nor the slab weakened.

(c) The excessive chasing away of concrete surfaces for the insertion of services will not be permitted.

(8) Granolithic or similar concrete finish shall not form part of the calculated thickness of the concrete floor.

(9) After the stripping of the formwork all concrete must be carefully inspected to see that it is free from defects.

(10) Defects such as fractures, gaps in concrete or void concrete, etc., shall not be plastered over. The attention of both the designer and an authorized officer of the council must be directed to such defects and should remedial measures be required these will be carried out under expert supervision.

EIGHTH SCHEDULE

STRUCTURAL DESIGNERS

Qualifications.

1. The requirements of the council for structural design will normally be satisfied if the designer can satisfy the council that he has carried out structural engineering design to a reasonable extent of the type to which by-law 129 of these By-laws applies and is a holder of an appropriate University degree or other appropriate qualification approved by the council.

2. For the purpose of by-laws 51 and 129 of these By-laws and this Schedule, a register of persons will be kept and anyone wishing to be included in the register will be required to make a written application to the council for inclusion in such register, at which time he shall submit details of his qualifications.

3. Any person who is a member of the council's panel of approved structural engineers at the date of the making of these By-laws will be included in the register referred to in rule 2 of this Schedule.

Components of buildings and special structures.

4. Unless the council otherwise agrees, no person other than one whose name is included in the register referred to in this Schedule shall carry out the design of the following components and special structures—

- (a) roofs of any materials exceeding 30 ft. span;
- (b) steel girders or reinforced concrete beams exceeding 25 ft. clear span;
- (c) cantilever structures exceeding 10 ft. projection;
- (d) towers exceeding 40 ft. in height above ground level or 20 ft. in height above roof level;
- (e) elevated water storage tanks exceeding 1,500 gallons capacity where the tank bottom is 20 ft. or more above ground level;
- (f) chimney shafts exceeding 50 ft. in height above ground level or 25 ft. above roof level;
- (g) floors in any building to be subject to an imposed loading exceeding 200 lb. per sq. ft. or to support concentrated loads such as tanks or machinery;
- (h) crane rails or gantries for transporting loads exceeding one ton;
- (i) roofs of any span which are required to support runways or rails for the transporting of any load, or to support any fixed load.

NINTH SCHEDULE

The Structural Use of Timber

Limiting spans of floor, roof and ceiling timbers:—

TABLE 1
Common Rafters
Clear span for various sections at different centres for tiled roofs

Effective span in feet	Centres of Rafters given in inches					
	12	15	18	21	24	30
3			3x1½	3x2
4			3x2	3x2
5	3x1½	3x1½	3x2	3x2
6	3x2	3x2	3x2	4x2
7	3x2	3x2	4x2	4x2
8	4x2	4x2	4x2	5x2
9	4x2	4x2	5x2	5x2
10	4x2	5x2	5x2	5x2

NOTES—(a) Rafter sections are given in inches, the depth being the first dimension given.

(b) For Spanish or Italian half-round tiles the depth of the rafters to be increased by 20 per cent.

(c) For pitches exceeding 35° the span can be increased by 10 per cent, and for those exceeding 45° by 15 per cent.

TABLE 2
Valley, Hip Rafters and Ridges

Valley Rafters—

- (a) Make 1½ in. thick and twice depth of common or jack rafters where the valley rafter is supported intermediately by purlins, which latter are strutted under junction with valley rafters; or
- (b) Make 2 in. thick and same depth as specified for ridges and hip rafters where the valley rafter is intermediately supported as (a) above.

Hip Rafters and Ridges

Sections to be as follows:—

Depth of rafters	Roof pitch up to about	
	35 degrees	45 degrees
Inches	Inches	Inches
3	6x1½	6x1½
3½	6x1½	7x1½
4	7x1½	8x1½
4½	8x1½	9x1½
5	8x1½	9x1½
6	9x1½	11x1½
7	11x1½	11x1½

TABLE 3

Purlins

Clear span in feet	Sections are given in inches									
	Clear distance apart of purlins in feet									
	2	3	4	5	6	7	8	9	10	
3	2x1½ 2x2	2x1½ 3x1½	2x1½ 3x2	3x1 3x1½	3x1½ 3x2	3x1½ 3x2	3x1½ 3x2	3x2	3x2	3x2
4	2x1½ 2x2	3x1 3x1½	3x1½ 3x2	3x1½ 3x2	3x2	4x1½ 4x2	4x2	4x2	4x2	4x2
5	3x1 3x1½	3x1½ 3x4	3x2	4x1½ 4x2	4x2	4x2 4x3	4x2 4x3	5x2 4x3	5x2 4x3	5x2 4x3
6	3x1½ 3x2	3x2	4x2	4x2 4x2	5x2 5x3	5x2 5x3	6x2 6x3	6x2 6x3	6x2 6x3	6x2 6x3
7	3x2	4x2	5x2 4x2	5x2 5x3	5x2 5x3	6x2 5x3	6x2 6x3	7x2 6x3	7x2 6x3	8x2 6x3
8	4x2	4x2	5x2 5x3	6x2 5x3	6x2 6x3	7x2 6x3	7x2 6x3	8x2 6x3	8x2 6x3	8x2 6x3
10	5x2 4x3	6x2 5x3	6x2 5x3	7x2 6x3	8x2 6x3	8x2 8x3	8x2 8x3	8x3 8x4	8x3 8x4	8x3 8x4

NOTES—

- (a) The bottom row of dimensions shown in each frame should be used where the purlins are inclined to a greater extent than 30° to the vertical plane.
- (b) For Spanish or Italian half-round tiles the depth of the purlin to be increased by 20 per cent, the depth being the first dimension given.

TABLE 4

Ceiling Joists

Sections in inches	Clear spans for various sections at different centres									
	in.		in. Celotex or similar ceiling			in.		in.		
	18		24		30	40		48		
	13	ft.	in.	ft.	in.	ft.	in.	ft.	in.	
3x2	6	0	5	9	6	5	3	4	9
3½x2	7	0	6	8½	6	5	6	5	6½
4x2	8	0	7	8	7	4	7	0	6
4½x2	9	0	8	7½	8	3	7	10½	7
5x2	10	0	9	7	9	2	8	9	7
6x2	12	0	11	6	11	0	10	6	9
7x2	14	0	13	5	12	10	12	3	11
8x2	16	0	15	4	14	8	14	0	12
9x2	18	0	17	3	16	6	15	9	14

TABLE 5

*Floor Joists to Residential Floors**Clear spans for various sections at different centres*

Section in inches	Maximum clear spans with joists at following centres									
	in. 14		in 15		in. 17		in. 20		in. 22	
	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.
3x2..	5	0	4	9	4	6	4	0
3½x2..	5	10	5	6½	5	3	4	11½
4x2..	6	8	6	4	6	0	5	8
4½x2..	7	6	7	1½	6	9	4½	6
5x2..	8	4	7	11	7	6	1	6
6x2..	10	0	9	6	9	0	8	8
7x2..	11	8	11	1	10	6	9	4
8x2..	13	4	12	8	12	0	11	10
9x2..	15	0	14	3	13	6	12	0
11x2..	18	4	17	5	16	6	15	7

Sections in inches	Maximum clear spans with joists at following centres							
	in. 15		in. 17½		in. 21		in. 25	
	ft.	in.	ft.	in.	ft.	in.	ft.	in.
6x2½..	10	6	10	0
7x2½..	12	3	11	8
8x2½..	14	0	13	4
9x2½..	15	9	15	0
11x2½..	19	3	18	4

	in. 15		in. 18		in. 21		in. 22½	
	ft.	in.	ft.	in.	ft.	in.	ft.	in.
	ft.	in.	ft.	in.	ft.	in.	ft.	in.
6x3..	11	0	10	6
7x3..	12	10	12	3
8x3..	14	8	14	0
9x3..	16	6	15	2
11x3..	20	2	19	3

NOTES—

- (a) Trimming and trimmer joists to be of such additional thickness as may be necessary to secure due stability of the floor.
- (b) Flooring—where joists are placed not further apart than 15 in. centre to centre, the flooring boards shall be not less than 1 in. in thickness, where the spacing is not greater than 18 in. the thickness shall be not less than 1½ in. and a spacing not exceeding 22 in. shall be not less than 1½ in. in thickness.

TIMBER AND ITS USE

1. Timber shall be of a quality and strength sufficient for the purpose for which it is intended to be used, and shall be well seasoned, sound and free from rot, beetle or other vermin. It shall not contain large, loose or dead knots, splits or other defects to such an extent and so situated as to render the piece of timber insufficient in strength or stiffness. In the calculation of these tables a maximum stress of 850 lb. per sq. in. has been used.

2. All timber used in structural framing shall be properly framed together with approved constructional joints. Where timber is jointed in its length, it shall be by means of an approved tensile or compressive joint which shall be adequately plated or otherwise secured to the satisfaction of the council.

3. Timber roofs shall be designed in a manner which removes any thrust on walls, piers or other means of support, unless adequate provision has been made in the construction of the wall, pier or other means of support to take all outward thrust to the dead load and wind load of the roof.

4. Timber roofs shall be adequately fastened down and connected to their means of support and wall plates shall be secured by properly built in hoop iron or by other means to the satisfaction of the council.

5. Timber, if so required by the council, shall be treated against infestation.

TENTH SCHEDULE

Fees

Fees payable to the council under the provisions of these By-laws.

A. General Charges:—

<i>Plinth area of building</i>	<i>Building fees</i>	<i>Structural drawings including certificate of good structural practice</i>	<i>Structural drawings when accompanied by calculations</i>
Minimum charges and for buildings having a plinth area of 500 sq. ft. or less	40	20	40
Over 500 sq. ft. but not exceeding 1,000 sq. ft.	100	20	40
Over 1,000 sq. ft. but not exceeding 1,500 sq. ft.	180	20	50
Over 1,500 sq. ft. but not exceeding 2,000 sq. ft.	240	20	60
Over 2,000 sq. ft. but not exceeding 3,000 sq. ft.	280	20	80
Over 3,000 sq. ft. but not exceeding 4,000 sq. ft.	320	25	100
Over 4,000 sq. ft. but not exceeding 5,000 sq. ft.	360	30	120
Over 5,000 sq. ft. but not exceeding 6,000 sq. ft.	400	35	140
Over 6,000 sq. ft. but not exceeding 7,000 sq. ft.	440	40	160
Over 7,000 sq. ft. but not exceeding 8,000 sq. ft.	480	45	180
Over 8,000 sq. ft. but not exceeding 9,000 sq. ft.	520	50	200
Over 9,000 sq. ft. but not exceeding 10,000 sq. ft.	560	55	220
For every additional 1,000 sq. ft. or part thereof over 10,000 sq. ft.	+20	+5	+20

I. 50 per cent of the above-mentioned fees shall be refunded in cases where the plans for which they are paid are subsequently withdrawn, disapproved or invalidated:

Provided that if such plan is re-submitted any fees refunded to the applicant shall be repaid to the council.

II. *Re-submissions or Amendments*.—If an approved plan is resubmitted and the work therein described has not been commenced a fee of Sh. 40 shall be paid. If an approved plan is substantially altered and re-submitted before the work therein described is commenced, a fee of 50 per cent of the original fee shall be paid with a minimum fee of Sh. 40.

III. *Amendments to Approved Plans*.—For minor amendments to approved plans, where the building is in the course of construction and a certificate of completion for the building has not been issued, a minimum fee of Sh. 40 shall be paid.

IV. *Drainage Plans*.—For plans relating solely to underground drainage work the minimum fee in the scale of general charges as prescribed in (I) above shall be paid.

V. *Additions*.—The general charges prescribed in (I) above shall apply:

Provided that, where the plan also shows alterations to a building, the cost of the alteration shall be calculated in the manner prescribed in (VI) below and added to the fee payable for the addition.

VI. *Alterations*.—The fee payable for alteration to buildings shall be at the rate of Sh. 5 for each Sh. 2,000 or part thereof, of the total estimated cost of the work as agreed by the council, with a minimum fee of Sh. 40.

VII. *Special Buildings or Structures*.—If a building has any storey in which the floor-to-ceiling height is in excess of 20 ft., for the purpose of calculating plinth area an additional floor shall be deemed to be constructed at that height and at each succeeding 20 ft. in height or part thereof. Where a mezzanine floor or a gallery projects into the floor-to-ceiling height it shall be considered to form part of any such hypothetical floor.
at the time of submitting them a fee shall be paid in accordance with the appropriate scale of the general charges. Where such drawings are limited, in respect of any plan, to simply supported reinforced concrete or structural steel lintels not exceeding a span of 20 ft. and reinforced concrete slabs not exceeding 200 sq. ft. in area, a fee shall not be payable.

VIII. *Structural Details*.—Where structural drawings are required,

B. LICENCE FEES FOR HOARDINGS AND SCAFFOLDINGS AT PAVEMENT LEVEL:—

Hoardings	Fees
If to remain not more than two weeks—per foot linear of frontage	Sh. 1
If over two weeks and not more than four weeks—per foot linear	.. 3
If over four weeks and not more than eight weeks—per foot linear	.. 9
If over eight weeks and not more than twelve weeks—per foot linear	.. 18
For every month or part of a month beyond twelve weeks—per foot linear	.. 10

ELEVENTH SCHEDULE

WATCHMEN ON BUILDING SITES

1. The number of watchmen permitted to be resident on any one site of new building development shall be in accordance with the Table set out below:—

TABLE

<i>Cost of proposed building development</i>	<i>Number of Watchmen</i>
Up to K£20,000	4
K£20,000 to K£50,000	6
For each additional K£50,000 over K£50,000	1

2. The accommodation shall comply with the following provisions:—

- (a) Not less than 40 sq. ft. of floorspace for each watchman.
- (b) The floor shall be constructed of an approved material and shall be raised at least 6 in. above the adjoining ground level.
- (c) The walls and roof shall be of corrugated iron or other suitable materials, and shall be weatherproof.
- (d) The height of the ceiling or roof shall provide an average height of not less than 7 ft. and be not less at any point than 6 ft. 6 in. above floor level.
- (e) Permanent ventilation and properly fitted doors and windows or shutters giving sufficient light shall be provided.
- (f) Adequate facilities for cooking shall be provided.
- (g) A sufficient water supply for drinking, personal hygiene, and for the washing of clothes shall be provided in an enclosure which is adequately screened.
- (h) Adequate latrine accommodation shall be provided.
- (i) On completion of the work in respect of which the accommodation was erected and before the issue of certificate of completion for such work, the accommodation shall be removed and the site left clear and tidy.

TWELFTH SCHEDULE

SANITATION

TABLE 1—DOMESTIC BUILDINGS (excluding dwellings)

W.C.s	<i>Firmenis</i>	<i>For accommodation other than for Principals, etc.</i>			
		<i>For Male Personnel</i>	<i>For Female Personnel</i>		
		1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons For over 100, add at the rate of 3 per cent.	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons For over 100, add at the rate for 5 per cent.		
Urinals	Nil for up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons From 101 to 200, add at the rate of 3 per cent. For over 200, add at the rate of 2½ per cent.	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons For over 100, add at the rate of 5 per cent.
Lavatory Basins	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons For over 100, add at the rate of 3 per cent.	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons For over 100, add at the rate of 5 per cent.
Cleaners' Sinks	At least 1 per 10,000 sq. ft. of floor area or part thereof, if required by the council.	

SANITATION

TABLE 2—FACTORIES

	<i>Fitments</i>	<i>For Male Personnel</i>	<i>For Female Personnel</i>
W.C.s	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons From 101-200, add at the rate of 3 per cent. For over 200, add at the rate of 2½ per cent.	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons From 101-2001 add at the rate of 5 per cent. For over 200, add at the rate of 4 per cent.
Urinals	Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons From 100-2001 add at the rate of 3 per cent. For over 200, add at the rate of 2½ per cent.	1 per 15 up to 105 persons For over 105, add at the rate of 5 per cent. 1 per 20 persons
Lavatory Basins* or Ablution Fountains	1 per 15 up to 105 persons For over 105, add at the rate of 5 per cent. 1 per 20 persons
Baths (preferably shower)	As required by the Council for particular trades or occupations.

*For trades of a dirty character, a more extensive provision may be required by the Council.

SANITATION

TABLE 3—RESTAURANTS, TEA ROOMS AND EATING HOUSES

<i>Fitments</i>	<i>For Male Public*</i>	<i>For Female Public*</i>	<i>For Male Staff</i>	<i>For Female Staff</i>
W.C.s	1 per 100 up to 400 For over 400, add at the rate of 1 per 250 or part thereof.	1 for 1-20 persons 2 for 21-100 persons 3 for 101-150 persons 4 for 151-200 persons	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons
Urinals	1 for 1-25 persons 2 for 26-100 persons For over 100, add at the rate of 1 per 50 or part thereof.	Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons
Lavatory Basins	1 for 1-25 persons 2 for 26-100 persons For over 100, add at the rate of 1 per 50 or part thereof.	1 for 1-25 persons 2 for 26-100 persons For over 100, add at the rate of 1 per 50 or part thereof.	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons

*It may be assumed that there will be equal numbers of males and females.

SANITATION

TABLE 4—HOTELS, RESIDENTIAL CLUBS, BOARDING HOUSES AND HOTELS

Fitments	For Residential Public and Staff		For Public Rooms		For Non-Residential Staff	
	For Males*	For Females*	For Females*	For Male Staff	For Female Staff	
W.C.s ..	1 per 8 persons omitting occupants of rooms with W.C.s <i>en suite</i> .	1 per 100 up to 400 For over 400, add at the rate of 1 per 250 or part thereof.	2 per 100 up to 200 For over 200, add at the rate of 1 per 100 or part thereof.	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons 5 for 58-77 persons 6 for 78-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons	
Urinals ..	..	1 for 50 persons	Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons			
Lavatory Basins	1 per 8 persons omitting occupants of rooms with bath <i>en suite</i> .	Sufficient in the vicinity of each W.C. or range of W.C.s with the Qminimum as for W.C.s <i>en suite</i> .	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons 5 for 58-77 persons 6 for 78-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons		
Batroom or separate showers	or 1 per 8 persons omitting occupants of rooms with bath <i>en suite</i> .	—	—	—	—	
Shop sinks ..	1 per 30 bedrooms: minimum 1 per floor	—	—	—	—	

*It may be assumed that there will be equal numbers of males and females.

SANITATION

TABLE 5—HOSPITALS

Furniture	For Administrative Buildings		For Medical Staff Quarters		For Nurses' Home
	For Male Personnel	For Female Personnel	For Male Staff	For Female Staff	
W.C.s ..	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons	1 per 4 persons	1 per 4 persons	1 per 8 persons
Urinals ..	Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons	—	—	—	—
Lavatory Basins	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons	1 in each bedroom and also one for each W.C. or group of W.C.s	1 in each bedroom and also one for each W.C. or group of W.C.s	1 in each bedroom, and also one for each W.C. or group of W.C.s
Baths ..	—	—	1 per 4 persons	1 per 4 persons	1 per 8 persons
Cleaners' Sinks ..	..	As required by the council.			

Note.—Sanitary provisions for wards must also be considered: the equipment required will vary with the type of hospital.

SANITATION

TABLE 6—CINEMAS, CONCERT HALLS, THEATRES, ART GALLERIES,
LIBRARIES AND MUSEUMS

<i>Fitments</i>	<i>For Male Public*</i>	<i>For Female Public*</i>	<i>For Male Staff</i>	<i>For Female Staff</i>
W.C.s	1 per 100 up to 400 For over 400, add at the rate of 1 per 250 or part thereof.	2 per 100 up to 200 For over 200, add at the rate of 1 per 100 or part thereof.	1 for 1-15 persons 2 for 16-35 persons	1 for 1-12 persons 2 for 13-25 persons
Urinals	1 per 50 persons	—	Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons	—
Lavatory Basins	Sufficient for each W.C. or range of W.C.s		1 for 1-15 persons 2 for 16-35 persons	1 for 1-12 persons 2 for 13-25 persons
Cleaners' Sinks	1 per 10,000 sq. ft. of floor area or part thereof, if required by the council.			

*It may be assumed that there will be equal numbers of males and females.

APPENDIX I

SECTION 30 OF THE FACTORIES ACT

(Cap. 514)

(1) Every hoist or lift shall be of good mechanical construction, sound material and adequate strength, and be properly maintained.

Hoists and lifts.

(2) Every hoist or lift shall be thoroughly examined at least once in every period of six months by a person approved for the purposes of this section by the Chief Inspector by certificate in writing, and a report of the result of every such examination, in the prescribed form and containing the prescribed particulars, shall be signed by the person making the examination and shall within fourteen days be entered in or attached to the general register.

(3) Every hoistway or liftway shall be efficiently protected by a substantial enclosure fitted with gates, being such an enclosure as to prevent, when the gates are shut, any person falling down the way or coming into contact with any moving part of the hoist or lift.

(4) Any such gate as aforesaid shall be fitted with efficient interlocking or other devices to secure that the gate cannot be opened except when the cage or platform is at the landing and that the cage or platform cannot be moved away from the landing until the gate is closed.

(5) Every hoist or lift and every such enclosure as aforesaid shall be so constructed as to prevent any part of any person or any goods carried in the hoist or lift being trapped between any part of the hoist or lift and any fixed structure or between the counterbalance weight and any other moving part of the hoist or lift.

(6) There shall be marked conspicuously on every hoist or lift the maximum working load which it can safely carry and no load greater than that load shall be carried on any hoist or lift.

(7) The following additional requirements shall apply to hoists and lifts used for carrying persons, whether together with goods or otherwise:—

- (a) efficient automatic devices shall be provided and maintained to prevent the cage or platform overrunning;
- (b) every cage shall, on each side from which access is afforded to a landing, be fitted with a gate, and in connexion with every such gate efficient devices shall be provided to secure that, when persons or goods are in the cage, the cage cannot be raised or lowered unless the gate is closed, and will come to rest when the gate is opened;
- (c) in the case of a hoist or lift constructed or reconstructed after the passing of this Act, where the platform or cage is suspended by rope or chain, there shall be at least two ropes or chains separately connected with the platform or cage, each rope or chain and its attachments being capable of carrying the whole weight of the platform or cage and its maximum working load, and efficient devices shall be provided and maintained which will support the platform or cage with the maximum working load in the event of a breakage of the ropes or chains or any of their attachments.

(8) In the case of a hoist or lift not connected with mechanical power—

(a) subsection (7) of this section shall not apply; and

(b) for subsection (4) of this section the following subsection shall be substituted:—

“(4) Any such gate as aforesaid shall be kept closed and fastened except when the cage or platform is at rest at the landing.”; and

(c) in subsection (2) of this section, for the reference to six months there shall be substituted a reference to twelve months.

(9) For the purposes of this section no lifting machine or appliance shall be deemed to be a hoist or lift unless it has a platform or cage, the direction of movement of which is restricted by a guide or guides.

(10) If it is shown to the satisfaction of the chief inspector that it would be unreasonable in the special circumstances of the case to enforce any requirement of this section in respect of any class or description of hoist, lift, hoistway or liftway, he may, by notice published in the Gazette, except from such requirements hoists, lifts, hoistways or liftways of that class or description, and any such exception may be unqualified or may be subject to such conditions as may be contained in the notice.

APPENDIX II

DAY OR BOARDING SCHOOLS AND COLLEGES

1. In these Rules, unless the context otherwise requires—

“boarding school” means a school at which ten or more pupils are boarded;

“day school” means a school, other than a boarding school or correspondence school, at which ten or more pupils are in attendance.

2. The minimum requirements for health, safety and means of escape in case of fire to which the premises of every school shall conform shall be those prescribed by these Rules.

3. (1) (a) Every classroom shall be constructed to accommodate not less than twelve students.

(b) No room used as a classroom shall accommodate in single-seat desks a greater number of pupils than the number produced by the following calculation:—

$$\text{area of room in square feet} - 140$$

11.3

(c) No room used as a classroom shall accommodate in double-seat desks a greater number of pupils than the number produced by the following calculation:—

$$\text{area of room in square feet} - 140$$

8.5

(2) (a) If the classroom is not square and not a special purposes room the desks shall all face down the length of the room.

(b) The desks shall be situated with at least one-half of the window area specified in rule 3 (3) of these Rules on their left.

(3) (a) Every classroom shall be provided with windows, the effective area of which shall not be less than one-fifth of the area of the floor of the room.

(b) Not less than three-quarters of the window area specified in rule 3 (3) (a) of these Rules shall be capable of being opened to the external air.

(4) No classroom shall be less than 8 ft. 6 in. in height from the floor to the ceiling, or, where there is no ceiling, to the wall plate.

4. Where practicable a water supply certified as wholesome by the Medical Officer of Health shall be provided.

5. (1) In every school well-lighted and ventilated closets and urinal stalls shall be provided in the following numbers:—

(a) In a day school—

for the first 30 girls—4 closets;
as to the next 270 girls—1 closet for every 39 girls;
for every additional 50 girls—1 closet;
for the first 30 boys—4 closets;
as to the next 270 boys—1 closet for every 30 boys;
for every additional 50 boys—1 closet:

Provided that, in the case of boys, if one-third of the prescribed number of closets, or two closets (whichever is the greater), are provided, urinal stalls may be provided in lieu of the remainder, one stall for each closet.

(b) In a boarding school—

for every 50 girls—7 closets;
for every 50 boys—5 closets and 2 urinal stalls.

(2) A urinal trough may be provided instead of urinal stalls, and in such case 2 ft. of the trough shall be the equivalent of one stall.

6. In every school wash-basins shall be provided in the following numbers:—

(a) In a day school—

as to the first 120 pupils—1 basin for every 30 pupils;
for every additional 50 pupils—1 basin.

(b) In a boarding school—

for every 5 pupils—1 basin.

7. In every boarding school there shall be provided showers or baths to the number of 7 for every 50 pupils, with a minimum of 2.

8. Where the number of closets or other installations are to be installed contains a fraction greater than one-half it shall be increased to the next whole number.

9. In every school separate lavatories and cloakrooms, with separate screened approaches thereto, shall be provided for either sex attending it.

10. (1) No room used as a dormitory shall accommodate a greater number of pupils than the number obtained by dividing the area of the floor in square feet by 40.

(2) (a) Every dormitory shall be provided with windows, the aggregate area of which shall not be less than one-tenth of the area of the floor.

(b) Not less than three-quarters of the window area as specified in rule 10 (2) (a) of these Rules shall be capable of being opened.

(3) (a) Every dormitory shall be provided with vents in the walls in such a manner as to provide permanent through ventilation, and the total area of the vents shall not be less than 81 sq. in. for every 600 cu. ft. of room space.

(b) No vent shall be less than 6 ft. above the level of the floor.

11. In every boarding school there shall be provided for every boarding pupil a bed of a pattern approved by the Director of Education.

12. In every boarding school, there shall be provided sufficient well-lighted and ventilated accommodation for the cooking, serving and eating of meals. Adequate facilities for cleansing all domestic utensils shall be provided. Suitable and sufficient washing and sanitary facilities for domestic staff shall be made available. An adequate number of dustbins shall be provided.

13. (1) In every school or part of a school sufficient doorways shall be provided having regard in particular to the degree of fire resistance of the building, to ensure rapid exit in case of fire or other emergency. Every door which is the only exit from a room or rooms designed to be occupied by more than 50 persons in all shall open outwards. Where an adequate mains water supply exists, fire hydrants shall be installed in manner recommended by the Ministry of Works

(2) In every school of more than one storey, there shall be either two staircases or one staircase with such alternative means of exit and descent from the upper storeys as is considered by the Chief Education Officer to be suitable and sufficient to ensure rapid exit in case of fire or other emergency. Every staircase or other means of descent shall serve every storey, and where there are more than one means of descent they shall be situated as far as practicable at opposite ends of the building.

(3) Every corridor and staircase or other means of passage or descent other than a fire escape shall be well lighted and ventilated, and shall be not less than 44' in. wide, and shall be provided with handrails where there are any steps or ramps between different levels.

Made this 29th day of November 1968.

L. G. SAGINI,
Minister for Local Government.

THE LOCAL GOVERNMENT REGULATIONS 1963
(L.N. 256 of 1963)

IN EXERCISE of the powers conferred by regulation 210 of the Local Government Regulations 1963, the Minister for Local Government hereby makes the following Order:—

THE LOCAL GOVERNMENT (ADOPTIVE BY-LAWS)
(GRADE II BUILDING) ORDER 1968

1. This Order may be cited as the Local Government (Adoptive By-laws) (Grade II Building) Order 1968.
2. The By-laws set out in the Schedule to this Order shall be the Adoptive Grade II Building By-laws which any municipal or county council may adopt.

SCHEDULE

PART I—PRELIMINARY

- | | |
|---|----------------|
| 1. These By-laws may be cited as the Local Government (Grade II Building) By-laws 1968. | Citation. |
| 2. In these By-laws, unless the context otherwise requires— | Interpretation |
| “building” means any structure, movable or fixed, of whatsoever kind or any part thereof intended to be used as a dwelling house or shop or ancillary thereto and includes drainage works and excavation; | |
| “building line” means a line drawn across a plot so that no building or permanent structure, except a boundary wall or fence of approved design enclosing the plot, may be erected within the area contained between that line and the plot frontage; | |
| “council” means a municipal council or a county council; | |
| “clerk” means a clerk to the council; | |
| “dwelling house” means a building designed for use exclusively as one self-contained residence, together with such out-buildings as are an ancillary thereof; | |
| “habitable room” means a room constructed or adopted as a living or sleeping room; | |
| “plot” means any piece or parcel of land whether demarcated by survey or not; and | |
| “residential area” means an area of land which has been approved by the council for use for residential purposes. | |
| 3. These By-laws shall apply to all land within the council’s area of jurisdiction except where otherwise specified by the council after having obtained the approval of the Commissioner of Lands—and except where the Local Government (Adoptive By-laws) (Building) Order has been applied to an area. | Application. |

L.N. 15/1969.

Erection of buildings not to be approved in certain circumstances.

4. The council shall not approve the erection of any building which is to be erected in contravention of these By-laws or where—
 - (a) the land concerned is unsuitable for any reason for the development purposes;
 - (b) that the plot is located outside the boundaries of an existing or proposed municipality, township, trading centre, market or residential area;
 - (c) the proposal conflicts with the proper planning of the area;
 - (d) the site concerned forms part of an area for which an approved comprehensive layout is, in the opinion of council, desirable

Erection of buildings.

5. Every person who proposes to erect a building on any land within the area specified under by-law 3 of these By-laws shall comply with the requirements of these By-laws, and for the purposes of these By-laws any of the following operations shall be deemed to be the erection of a building after the date on which these By-laws become operative—

- (a) the erection of any new building;
- (b) the erection of any addition to an existing building;
- (c) the re-erection or alteration of any part of any existing building;
- (d) the roofing over of any space between walls or buildings;
- (e) the changing of any purpose or purposes for which a building or part of a building or appurtenances of a building are used;
- (f) the using for human habitation of any building or part thereof which has not been previously used for that purpose;
- (g) for using of any building in a manner different from that shown on the plans thereof approved by the council whether before or after the date on which these By-laws become operative, and whether or not it is proposed to execute any alterations or work in connexion with the proposed change;
- (h) the carrying out of any water service or drainage works;
- (i) any other work which involves the use and assembly of building materials to a structure in any form whatsoever.

Siting of a building.

6. No building shall be sited on a plot otherwise than in accordance with the approval of the council.

Minimum areas of plot and buildings thereon.

7. (1) Except where otherwise approved by the Commissioner of Lands, no plot shall be less than 2,800 sq. ft. in area and not more than quarter of one plot shall be built upon. In calculating the area of the plot which is built upon, the verandah or any part of the plot which is not open to the sky shall be included.

(2) No building shall be erected within 5 ft. of a boundary of the plot on which it stands unless the council expressly so authorizes in any particular case:

Provided that—

- (i) a latrine may be sited on the line of a back boundary or on a side boundary of a plot if it forms part of a semi-detached building containing any other latrine on an adjoining plot; and
- (ii) buildings constructed of grass or other inflammable material shall be sited not less than 10 ft. from any side boundary.

8. (1) Every dwelling house must be provided with a latrine of a type approved by the council.

(2) A pit latrine shall be at least 20 ft. in depth from ground level to the bottom of the pit, and shall be provided with a roof the height of which shall be at least 6 ft. 6 in. from the floor to the underside of the roof or ceiling. A pit latrine shall also be provided with a concrete stance and with a fly-proof cover.

Latrine.

(3) A latrine shall be sited in a position approved by the council and shall not be nearer than 30 ft. from any habitable room, or room used for the preparation, cooking or storage of food:

Provided that, in exceptional circumstances, the council may, on the advice of the Medical Officer of Health of the council or Chief Health Inspector of the council, permit a pit latrine to be constructed within 30 ft. from a habitable room.

9. Every dwelling house shall consist of at least one habitable room in addition to a kitchen, ablution and privy accommodation for the exclusive use of the occupants of the house.

Dwelling house.

10. (1) Where a ceiling is provided, the average height of a habitable room shall be not less than 7 ft. 9 in. with a minimum height of 7 ft. Where a ceiling is not provided the average height measured to the underside of the roof covering shall be not less than 8 ft. 3 in. with a minimum height of 7 ft.

Habitable rooms.

(2) Every habitable room shall have a superficial area of not less than 75 sq. ft., with a minimum width of 6 ft. 6 in. and shall contain a minimum area of 40 sq. ft., for each person accommodated therein:

Provided that in every dwelling of two or more habitable rooms there shall be constructed one habitable room having a superficial floor area of at least 120 sq. ft.

11. The area of the kitchen shall not be less than 25 sq. ft. and not less than 7 ft. in height at any point from the floor to the underside of the roof or ceiling and shall have a satisfactory outlet for smoke and fumes and be lighted and ventilated in accordance with by-laws 13 and 14 of these By-laws.

Kitchen.

Bathroom. 12. The bathroom shall be at least 2 ft. 6 in. by 4 ft. 6 in. and if roofed, shall be provided with lighting and ventilation in accordance with by-laws 13 and 14 of these By-laws. The minimum height of any such bathroom, from the floor to the underside of the roof or ceiling shall not be less than 6 ft. 6 in. and adequate provision shall be made for the disposal of all waste water by means of a trapped and properly covered soak pit or other method approved by the council.

Windows. 13. Every habitable room, kitchen, roofed bathroom and latrine shall be provided with a sufficient number of windows opening to the external air so as to provide a clear lighting area equal to at least one-tenth of the floor area of such room, and of which at least one-twentieth of the floor area shall be capable of being opened.

Ventilation. 14. Every habitable room, kitchen, roofed bathroom and latrine shall be provided with permanent through or cross ventilation by means of openings which shall give direct access to the external air and the aggregate area of any such openings shall be equal to at least one-hundredth of the floor area of any such room.

Surface water drainage. 15. Surface water drainage shall be provided to the satisfaction of the council.

Fencing. 16. If so required, by the council, the owner of the plot shall cause the plot to be fenced in such manner and by the use of such material as may be required by the council.

Relaxation or by-laws. 17. Where any building is required for a temporary period not exceeding six months, the council may at its discretion, permit a relaxation in respect of the by-laws relating to latrines, ablutions and kitchens.

Part II—Method of Construction

Foundations. 18. Foundations shall be adequate to support the load transmitted to them and be generally to the satisfaction of the council.

Walls. 19. No walls shall be constructed to a lower specification than wattle or similar timber adequately framed together and filled and covered with mud. Such walls shall be capable of supporting the roof. The covering shall be of adequate thickness and the surface internally and externally shall be sealed and brought to a smooth finish in materials approved by the council and decorated and maintained in a sound and good condition and be redecorated from time to time as required by the council:

Provided that the council may specify the materials to be used in constructing and finishing the walls.

Floors 20. Every floor shall have a smooth finish and shall be at least 6 in. above the surrounding ground level. A floor shall be constructed of concrete, compacted earth or such other materials as approved by the council.

21. Every roof shall be of corrugated iron, aluminium, asbestos or other permanent materials or shingles as may be required by council and shall be supported on an adequate frame of poles, timber or similar material. Any material used shall be in good condition and the roof shall be so constructed as to be weatherproof and regular in shape and the pitch of the roof shall conform with the council's requirements:

Roof.

Provided that—

- (i) where roofs are to be constructed of corrugated iron or aluminium the council may require that ceilings be provided and that corrugated iron roofs be painted and maintained from time to time; and
- (ii) the council on the advice of the Town Planning Advisor may set aside either the whole or part of a Grade II building area where roofs may be permitted to be constructed of grass or other similar material.

22. Frames of doors and shutters shall be constructed in such a way as to be rigid and shall be firmly fixed in the walls.

Frames of doors and shutters.

23. Bathrooms and latrines and each habitable room shall be provided with doors or shall be screened in a manner approved by the council. Such doors shall be at least 2 ft. 3 in. wide and 6 ft. 6 in. high.

Bathrooms and latrine doors

24. No person shall construct a well in connexion with any building, except with the approval of the Medical Officer of Health of the council or the Chief Health Inspector of the council.

Well.

Part III—Miscellaneous

25. Every person proposing to erect any building in an area to which these By-laws apply shall lodge with the council an application on a form obtainable from the council and three copies of the plan of the proposed building showing its siting and the layout of the site together with a front and back elevation of the building and section of the building from the foundations to the uppermost part of the structure to illustrate the construction thereof, with all drawings delineated in a clear and intelligible manner and signed by the applicant or his duly authorized agent. The plans shall specify the proposed use of each room and give details of the method of construction and materials to be used:

Applications for erection of buildings.

Provided that where an approved council "type" plan is used the provisions of this by-law shall be met if the owner signs and deposits three copies of such plan together with the application form duly completed with the council.

26. Applications made under by-law 25 of these By-laws shall be accompanied by a fee of Sh. 40 for a single dwelling or alterations thereto and an additional fee of Sh. 20 for each additional dwelling included in the application.

Fees.

Decision on applications.

27. The council shall approve or disapprove the plan for the erection of a building and it shall signify notice of its decision thereon as soon as practicable after receipt thereof. Such notification shall be given within a maximum period of two months of the receipt of an application in accordance with these By-laws.

Approval by the Council to be void in certain circumstances.

28. The approval of the council of any plans for the erection of a building shall be null and void if—

- (a) the erection has not been commenced within three months after the date of such approval; or
- (b) erection has been commenced but the building has not been completed within a period of twelve months from the date of approval, unless the council has agreed to grant an extension of time.

Erection of buildings without approval prohibited.

29. (1) No person shall—

- (a) commence to erect a building without plans thereof having been approved by the council, or in respect of which the approval of plans has become null and void; or
- (b) having obtained the council's approval to the plans for the erection of a building, erect such building otherwise than in accordance with the approved application and plans thereof.

(2) Without prejudice to the liability of any person under paragraph (1) of this by-law, the council may serve upon such person or upon the owner of the land upon which the building is erected, a notice under the hand of the clerk requiring him within a period of time specified in such notice to do all or any of the following things—

- (a) to cease the erection of such building;
- (b) to erect such building strictly in accordance with the approved plans;
- (c) to execute such work or alterations or additions to such building as may be prescribed in such notice in order to render such building safe and sanitary or otherwise conform with the requirements of these By-laws;
- (d) to remove or demolish such building.

(3) If any person, on whom a notice has been served as aforesaid, fails to comply with all or any of the requirements of such notice, then the council may, after not less than 48 hours notice in writing given under the hand of the clerk served upon such person, enter the premises and execute such alterations or additions to such building or remove or demolish the building without liability for any loss or damage which may be occasioned thereby and may recover the cost thereof from such person as a civil debt.

Notice of intention to commence building.

30. After plans have been approved by the council the applicant shall give notice to the council in writing of his intention to commence building and shall not commence building until the site of the building has been marked out by the owner and approved by the council.

31. No person shall occupy or permit the occupation of any building to which these By-laws apply until he has obtained from the council a permit in writing authorizing occupation of such premises. Such permit shall not be issued unless the council is satisfied that the building has been erected in accordance with the application and approved plans thereof and that the construction is to a standard not lower than is required by these By-laws.

Occupation of
building without
permit pro-
hibited.

32. (1) Any person who contravenes or fails to comply with any of the provisions of these By-laws shall be guilty of an offence and liable—

Penalty.

(a) to a fine not exceeding two thousand shillings in respect of a first offence and not exceeding three thousand shillings in respect of a second or subsequent offence, or imprisonment for a period not exceeding six months in respect of a first offence and not exceeding nine months in respect of a second or subsequent offence, or both such fines and such periods of imprisonment; and

(b) in addition to the above penalty, in the case of a continuing breach, to a fine not exceeding twenty shillings for each day or part thereof during which such an offence shall continue:

Provided that the aggregate of any fines imposed in the case of any one continuing offence shall not exceed two thousand shillings.

(2) In addition to any penalty as aforesaid, any expenses incurred by the council in consequence of the breach of any of these By-laws or in the execution of any work directed under these By-laws to be executed by any person and not executed by such person, shall be paid by the person committing such breach or failing to execute such work

Made this 29th day of November 1968.

L. G. SAGINI,
Minister for Local Government.

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